Traditional Marquesan Agriculture and Subsistance: Cultivation and Processing of Specific Agricultural Products Part II of IV

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Cooking and Eating

Food preparation and consumption was an important aspect of ancient Marquesan life. In the words of Robarts (1974:252) who lived in the Marquesas in the first decade of the 19th century, "In times of plenty they eat a deal and often." The institution of feasting associations and the centrality of *ko'ika*[1] in Marquesan society are expressions of the importance of food on a scale beyond the daily needs of a family. This section treats cooking and eating generally. Preparations specific to a particular crop are found in later sections dedicated to each crop.

Although some of the following descriptions lack detail, they appear to describe most of the dishes recorded by Handy (1923) – many still being made today. These include: *makiko*, *poke*, *heikai*, *heikai vaihopu*, *mei 'o'omi* (*'omi*), *ka'aku*, *popoi*, *popoi hakauo*, *mā*, *puaka tao*, and fire-roasted breadfruit.

The earliest European accounts record both open-fire roasting and earth-oven baking, as well as eating on *paepae*:[2]

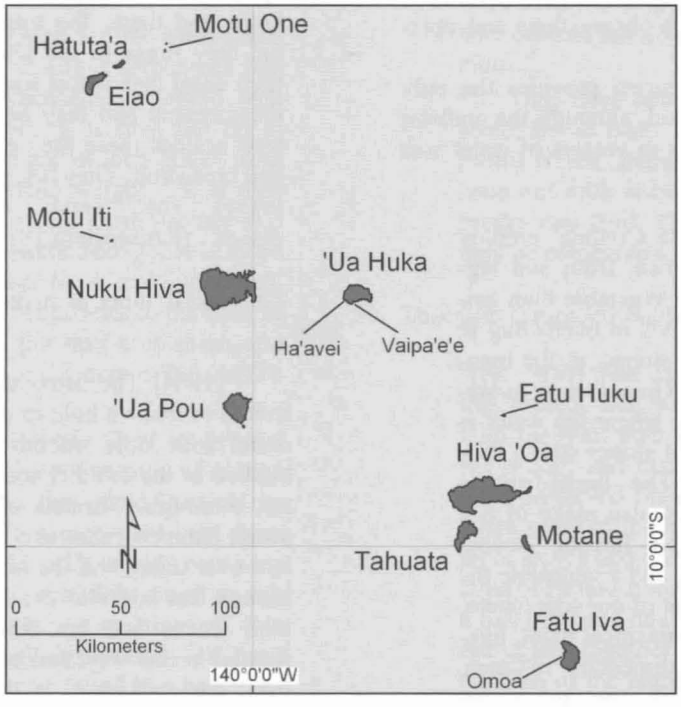

Figure 1. Map of the Marquesas archipelago.

> "[1774[3]]…[the houses] are built on a square or oblong pavement of Stone raised some height above the level of the ground; they likewise have of these pavements near their houses, on which they sit to eat and amuse themselves. In the article of eating these people are by no means so cleanly as the Otaheiteans, they are like wise equally dirty in their Cookery. Pork and Fowles[4] are dress'd in an Oven of hot stones as at Otaheite but fruit and roots they roast on the fire, and after taking off the rind or skin, put them into [a] Platter or trough with Water, out of which I have seen both men and Hoggs eat at the same time. I once saw them make a Batter of fruit and roots deluted with Water,[5] in a vessel that was loaded with dirt and out of which the hogs had been but that moment eating …" (Cook 1961:375)

Members of the English expedition of 1774 were unimpressed by culinary cleanliness on Tahuata:

> "Their principal food is bread-fruit, which they roast over the fire, rarely baking it under ground; when it is sufficiently done, they put it into a very dirty wooden trough, out of which their hogs are fed at other times, and mix it up with water. This mixture they scoop out with their hands. They also prepare fermented paste from their bread-fruit,[6] of which they make the same kind of acidulous pottage, which is a great dainty with the Taheitian chiefs. Their breadfruit is doubtless the largest and most delicious which we ever tasted…. Their food consists of the same variety of fruit and roots which are common at Taheitee, except the apple (*spondias*). Their diet is chiefly vegetable; though they have hogs and fowls, and catch abundance of fish at certain times. Their drink

[1] Generally glossed as "feast" or "celebration". See Dening (1971) and Thomas (1991) for more on feasting in the ancient Marquesas.
[2] *Paepae* = stone house foundation.
[3] Dates in square brackets at the beginning of quotes indicate the year the observation was made.
[4] In all quotes, spelling and grammar from the original publications is retained.
[5] Perhaps this is the first written reference to the staple Marquesan dish *popoi*.
[6] First written record of *mā*.

> is purely water, since coco-nuts are scarce, at least in the parts we visited." (G. Forster 1968:359)

In the following passage, it is unclear whether the Forsters describe pounded *popoi* or *mei 'o'omi*. At a house well inland at Vaitahu they "saw some larger wooden troughs here, and found pieces of bread-fruit mixed with water in them" (ibid.).

> "[1774] They live chiefly upon breadfruit, which they toast & put into a wooden dirty trough with water & eat it with their hands scooping the fruit & water together up in a very slovenly manner." (J. R. Forster 1982:491)

The overlap in the descriptions of Cook and the Forsters is due to the fact that the expedition's Marquesan visit was confined to a three-day stay in one bay on Tahuata. They clearly draw on each other's observations and opinions in their published accounts.

In the historic accounts, Fleurieu provides the only mention of Marquesans boiling food, although the cooking technique of placing heated stones in vessels of water was formerly common in the Pacific:

> "[1791] The natives of Santa Cristina[7] employ jointly in their food, meat, fish, fruit, and legumes;[8] but their diet is more vegetable than animal. They dress pork and fowls in ovens dug in the ground, and heated with stones, in the manner of all the islanders of the Great Ocean; sometimes too in wooden vessels, where the water is made to boil by means of hot stones which they throw into it repeatedly. The bread-fruit is dressed over a bare fire: they also make of it a paste which has an agreeable flavour. Cocoa-nuts, plantains, ginger, yams, and a vegetable the taste of which approaches that of our scorzonera, and which is gathered on a parasitical plant, likewise make a part of their alimentary regimen. Not unfrequently they eat fish raw, and sometimes even pork…."[9] (Fleurieu 1801:115)

Crook (1952:cxxx) writes that sweet potato, *pia*, yams and taro "are variously mixed, with Cocoa nut juice poured upon them, to be eaten as pudding, which is taken up in the fingers." Perhaps he is describing *poke*. Robarts (1974:252) describes another Marquesan treat, "a sweet meat made of sweet bread fruit and coco nut milk bak'd in plantain leaves in the ground," that could be either *makiko* or *heikai* (*feikai*).

Robarts (1974:251) indicates the centrality of *popoi*: "Their food consists of a pudding or thick batter made of Bread fruit, with which they eat fish roasted or raw fish souced in salt water." The latter tested his limits. After about 6 months on Tahuata he tried raw "Boneeto" and though he had avoided trying it up to then, "found it pleasant and relishing, being souced in salt water. And from that time I eat raw fish in preference to broiled, this making good the old saying that what is one mans meat is anothers poison. For once I thought that I never could eat raw fish" (ibid.).

Lisiansky (1814:87) declares simply that "The food of these islanders consists chiefly of fish, swine, cocoa-nuts, plantains, bananas, bread-fruit, tarro-root, and sugar-cane." Krusenstern provides his understanding of the general diet on Nuku Hiva at the beginning of the nineteenth century:

> "[1804] Their cookery is very simple; for except hogs, and these, the Englishman [Robarts] told us, they dress in the Otaheite [Tahiti] fashion, their chief dish is this sour pudding, which is not disagreeable and may be compared to an apple tart: besides these they eat yams, taro, bananas, and breadfruit. They bake their food upon banana leaves that serve them as well for dishes." (Krusenstern 1813:161-62)

Langsdorff hints at a more complex culinary repertoire:

> "[1804] The usual manner of cooking the fruit is to make a hole in the ground, and pave it round with large smooth stones; a fire is then kindled in the middle, and as soon as the stones are thoroughly heated, the ashes are cleared away; bamboo canes and banana leaves are then laid over them, and the bread-fruit wrapped in a banana leaf laid into the oven, which is covered with leaves and hot stones. The fruit, when roasted in this way, and eaten with milk pressed from the cocoa-nut, is called *waikai*,[10] and is esteemed very delicious. The Chief of Taiohaie [Taioha'e] once brought us a present of this dish, as a specimen of the cookery of his county, and we all liked it exceedingly. Another way of dressing the bread-fruit is to take off the outward shell after it is roasted, and mix it with water, or milk of cocoa-nut, with some of the nut scraped fine; this is called *kakuh*[11], and is also very pleasant.

[7] Tahuata.

[8] The only traditional Marquesan cultigen in the family Leguminosae (now Fabaceae) is *ihi* (the Tahitian chestnut, *Inocarpus fagifer*) and it is doubtful that field legumes such as beans and peas were being cultivated very much at the early contact period that Fleurieu describes. Legume is probably from the original French for "vegetable"

[9] Presumably Fleurieu is not implying eating raw pork, but is rather commenting on the rarity of pork in the daily diet.

[10] *Heikai*?

[11] *Ka'aku*. Gracia (1843:141-2) describes *ka'aku* (his "kakou") as pounded hot breadfruit and coconut milk.

> "… There are many other ways of dressing the bread-fruit, mixed with taro, with yams, with bananas, or other fruits, concerning which I could not obtain any accurate information." (Langsdorff 1813:124-25)

Robarts (1974:277-79) describes the preparation of several Marquesan dishes:

> "[ca. 1800] As I have described the manner of preserving their food, [I] must also describe the manner of makeing it ready for use. Now, when the Mah – for that is the native name of the Bread fruit after it is preserved in the Pitt and becomes one body, like so much clay, butter, or cheese – when [the *mā* is] new [it] is of a pleasant tart taste, and as it grows older is more sour. It is good food with fish or pork, but without either it is not savory to a stranger.
>
> "When they prepare the Mah for use when taken out of the ground, if new, [it] is sometimes like whet meal. It is then Kneaded and workd with water to a proper temper. It is then put up in leaves and made up in shape of long bricks from three pound to thirty pound weight.[12] It is then baked in the ground in a very clean manner in a shallow pit. When it is baked enough, it is taken out to cool and then beat on a shallow trough, mixing it with water till it becomes to the state of slack dough. It is then put into a calabash and sometimes mixed with coco nutt milke, which makes it very good.[13]
>
> "This is their principal food. They in general make enough for several days in time of plenty, and when they have any ripe bread fruit on the trees, they roast some in a morn and beat them into a dough and pour the milk of old coco nutts over it[14] and eat it with raw fish sousd in salt water. Persons who never see or heard of raw fish being eaten may think this an odd dish, but I ashure my reader that I have found it to be a most excellent Dish, and it is one of their greatest Luxuries. At other times they roast the Bread fruit and mash it in cold water[15] and eat sea weed soused in salt water when there is no fish to be got. This is a comfortable meal, far better than Potatoes and milk, which is often used in poor families in England, Wales & Ireland.
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> "They have another dish which in general is used as a dessert at feasts and great mens houses. They collect the finest Bread fruit they have and break the stalks and then drive a bit of stick into the fruit and then packs with grass about a dozen of fruit into the Bark of a tree, then covers it with another, stopping each end with coco nutt shell to Keep out the rats. Being bound up [it] forms a narrow trunk, It is then put by for three days and when opend is turnd soft and very sweet. They then scrape a quantity of old coco nutts and work out the milk as thick as cream. They get the center leaf of a plantain tree, which is about two feet wide and four or five long. It is scorched over a slow fire, which renders the leaf like silk. Into this they put five or six fruit and pours over a quantity of the milk. It is then tied up in double Leaves and carefully put into the Bakeing Pitt, were it stays six to eight hours. When done, it is take out and hung up to cool. It is sweet and luscious.[16]
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> "… They have two more Kinds of food. One is sweet Bread fruit. The other is the Arrow root, [with] which, Being baked and beat to a dough, coco nut milk is boild with hot stones, Untill it breaks into curd. This is also very good food. It may be compared to a rich batter pudding."[17]

Thomson comments on daily food preparation:

> "[ca. 1840] The daily avocations of the savage life present but little variety. The natives rise with the sun; then go inland for breadfruit and fire wood; and occasionally to their pits where their preserved breadfruit, called *ma* is keeped; when some of the *ma* is taken out, it is wrapped up in leaves and brought home. It is cooked in an oven of heated stones after which it is beaten into a fine pulp and mixed with breadfruit, when both are beaten together and forms *popoi*, the principal dish of the natives. When beaten it is placed in a large bowl or trough, and left in the house for the use of the family when they feel disposed to eat.
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> "To their meals they sometimes add fish, generally eaten raw; chiefs occasionally have some pork which has been cooked with heated stones. In the course of the forenoon or morning, if they can obtain any kava, they take such a quantity as

[12] Gracia (1843:141) writes that *mā* was cooked in oblong loaves and eaten by itself or mixed to make *popoi*. Dordillon (1904:223) names these oblong *mā* packages *piahi,* although in modern Nuku Hiva usage *piahi* refers to a different dish (also baked loafs). See footnote in the section "Ihi".
[13] *Popoi hakauo* (Handy 1923:196).
[14] *Ka'aku.*
[15] *Mei 'omi* (Handy 1923:191). Gracia (1843:142) describes *mei 'o'omi* (his "mei oomi") as hot breadfruit crushed and put into water.
[16] Very similar to Handy's (1923:193-94) description of making *heikai vaihopu.*
[17] Perhaps *poke* as described by Handy (1923:199).

puts them completely past all exertion; it does not affect the reason like ardent spirits, but makes them drowsy and averse to noise, thus they sleep away most of their time, or spend it in discussing subjects of no importance; occasionally, however, they are what they call busily employed either war, house building, canoe making or preparing for a feast occupies their attention, but even then they find time enough in the course of the day for a sleep of some hours." (Thomson 1980:26-27)

Commodore David Porter's party was feasted at Hakau'i with "hogs and bread-fruit after their manner which were found excellent." Porter had a better opinion of Marquesan standards of cleanliness than the English of 1774:

> "[1813] The manner of cleansing and cooking their hogs is as follows: a hole of a convenient size is dug in the ground, the bottom and sides of which are lined with stones, a fire is then made in it, and the whole covered with more stones. The hog is then strangled, and when the stones are sufficiently heated, is drawn backward and forward on them to remove the bristles, which, by this practice, are easily taken off. He is then carried to the stream and there gutted and washed clean, The upper layer of stones and fire are then removed, and the lower tier and sides are carefully covered with plantain leaves, on which the hog is laid after having his inside filled with hot stones enveloped with leaves. The whole is then covered with the same kind of leaves, and the remaining stones are laid on him, over which is placed another covering of leaves, and this is covered with dirt, which had been taken from the hole. In the course of an hour it is perfectly cooked, the coverings are carefully removed, the meat served up on clean plantain leaves, and *no mode of cooking can possibly excel it in point of taste, cleanliness, or appearance*. The bread-fruit is also enveloped in plantain leaves, and roasted in the embers." (Porter 1970:83, italics mine)

Robarts gives more detail about *umu* or earth ovens:

> "[ca. 1800] Their ovens or bakeing pits are of different sizes as wanted. None are more than two feet deep. They place a quantity of wood in the pit and covers it over with stones and then procures fire by rubbing two sticks together. In a short time they get fire. The oven is set fire and in half an hour the stones are red hot. The oven is cleard and part of the stones is put in the bottom and leaves on them to prevent the food from burning. The food is put in and close coverd with leaves. Over all, earth is put on and close coverd down, so that no steam escapes. When done the earth is carefully removd and the leaves taken off, and the food is served in a very clean manner." (Robarts 1974:279)

"Separate messes"

Tapu and its maintenance were important in traditional Marquesan society.[18] Part of the maintenance of tapu included, in certain circumstances, attention to who ate with whom and whose hands prepared food. The treatment this interesting topic deserves is beyond the scope of this research, but I include below a few passages touching on the subject. These passages suggest that the situation was complex and that no blanket generalizations – such as "men and women could not eat together" – can be made.

Cook was, no doubt, aware of concepts of tapu from his visits to other parts of Polynesia. Of his brief stay at Tahuata, he comments "[1774]… nor can I say if it is the Custom for men and Women to have separate Messes. I saw nothing to the Contrary, indeed I saw but few Women upon the whole" (Cook 1961:375). Fleurieu (1801:130) misread Cook as saying that men and women *have* separate "messes." Fleurieu mentions men, women and children eating together (in 1791). He notes that "Captain Chanal was several times present at the meals of the inhabitants of La Madre de Dios, and he saw the men, women, and children eat in common, and feed on the same dishes" (Fleurieu 1801:130).

Lisiansky (1814:87) thought it was a public/private distinction: "[1804] Both sexes eat their meals together, except when public dinners are given in the dining rooms,[19] where women do not dare appear, for reasons which I have before assigned."

In what is probably an oversimplification, Gracia (1843:143) states that food for men and women had to be cooked separately (ca. 1840). He says the same for "chiefs" and "plebians." Stewart (1970:241) writes that breadfruit, coconut, yam, and most fish anyone can eat, but that bananas, hogs, turtle, cuttlefish, "bonetta," and albacore were only for the tapu class (observations in 1829).

Mei (breadfruit, Artocarpus altilis)[20]

Accounts from the English visit of 1774 mention roasting breadfruit on an open fire and "mixing it with water." Robarts (1974:251) also notes breadfruit roasted on an open fire.

G. Forster (1968:359) felt that at Vaitahu the "breadfruit is doubtless the largest and most delicious which we ever tasted…." Crook also was impressed with Marquesan breadfruit:

[18] Dening's (1971) doctoral thesis is a masterful treatment of aspects of this topic. Also see Thomas (1990).
[19] Perhaps a reference to men's feasting clubs and their eating together in club houses.
[20] Latin binomials follow the usage of the Germplasm Resources Information Network (GRIN) taxonomic database.

> "[ca. 1798] The breadfruit, when not stored, is likewise gathered before it is fully ripe, in which latter state the natives are not fond of it; and it is baked or roasted for food; the hard rough rind being dexterously pealed by them. That which grows luxuriantly in the lower parts of the Vallies, *excels what is found in most other Islands, both in the size of the fruit, and that of the Tree*. The trees which grow in the higher parts of the Vallies as they ascend toward the Mountains within land, are much stinted, hardly exceeding the common size of our apple trees, yet they are proportionately very productive, and the fruit is as large as the other, but later in the Season. The species are very numerous, and have distinct names."[21] (Crook 1952:cxxix, italics mine)

He describes a particular instance of breadfruit growing in "higher parts:"

> "[We] descended into the Valley of Muakke [Mu'ake]…and thence into Hakkapa [Hakapa'a]. The breadfruit grows in these places, almost to the summit of the Mountains, and upon the steep sides of the inferior hills; and although the Size of the Trees is comparatively diminutive, and the Fruit later in its season than that upon the lower ground, yet it comes to equal size and perfection." (Crook 1952:clxxiv)

Crook (1952:cxxix) notes the predominance of breadfruit in the diet: "The Breadfruit is their staple article, and the only one which they treasure up against times of need, although it is very seldom planted by them." Robarts (1974:246) writes that the "Bread fruit tree is the most principal [of their food crops], its fruit being the main subsistence of the Inhabitants of all these Isles."

While living at Puama'u on Hiva 'Oa, he (1974:85-6) mentions his "friends brother in law was going to his bread fruit gathering," at a valley on the south coast where "tenants" looked after the land.[22] Later while living at Taioha'e, Robarts (1974:123) mentions harvesting and storing the breadfruit on he and his bride's land.

Lisiansky (1814:90) provides measurements of breadfruit from Nuku Hiva: "*Toomoomey*, or Bread-fruit-tree [*tumu mei*].… Its fruit is of an oblong figure, measuring lengthwise from five inches and a half to six inches and a half, and breadthwise from four to five inches…" Porter gives measurements as well as a long description of its uses, harvest, and propagation:

> "[1813] The bread-fruit tree of this island grows in great luxuriance, in extensive groves, scattered through every valley. It is of the height of fifty or sixty feet, branching out in a large and spreading top, which affords a beautiful appearance and an extensive shade from the rays of the sun; the trunk is about six feet in circumference; the lower branches about twelve feet from the ground…. The leaves of this tree are sixteen inches long and nine inches wide, deeply notched somewhat like the fig leaf.… The bread-fruit tree is everything to the natives of these islands. The fruit serves them and their hogs for food throughout the year, and furnishes large supplies to be laid up for a season of scarcity. The trees afford them an agreeable and refreshing shade; the leaves are an excellent covering for their houses; of the inner bark of the small branches they make cloth; the juice, which exudes, enables them to destroy the rats which infest them; and of the trunk of the tree they form their canoes, many parts of their houses, and even their gods. Described to one of the natives of Madison's Island a country abounding in every thing that we consider desirable, and after you are done, he will ask you if it produces bread-fruit. A country is nothing to them without that blessing, and the season for bread-fruit is the time of joy and festivity. It commences in December, and lasts until September, when the greatest abundance reigns among them. They sometimes gather it when at the extremity of the branches, by means of a long stick split at the end, with which they seized the stem, and dexterously to your twist it off, rarely letting the fruit fall to the ground. They commonly, however, have a small net, kept open at the mouth by means of a hoop, and attached to a pole, in the manner of a crab net; with this they disengage the fruit from the branches, receiving it in the net.
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> "The young shoots from the roots are carefully collected, and planted in a nursery, until they arrive at a sufficient size to be transplanted; they are several years old before they bear." (Porter 1970:54)

At Taipivai, Stewart (1970:341-2) saw "an extensive plantation of bread-fruit, studding the rising grounds in lines as straight as those of a carefully arranged orchard at home." Gracia (1843:221) notes that among trees "the most esteemed by the natives and useful are coconut and bread-fruit." He (1843:221) writes that breadfruit, "font la base de la nourriture de toute ces îles." Dalton (1995:76) confirms that "Leur principale nourriture est une pâte aigre faite à partir du fruit de l'arbre à pain dont ils mangent une quantité énorme, avec du poisson cru, des chats, des chiens et de la chair humaine." Jardin (1862:21) notes that Marquesans ate almost exclusively breadfruit: "Quant à la culture de

[21] If Crook had recorded them, they would have been interesting to compare with the cultivar lists of Jardin and Christian collected 50 and 100 years later.

[22] Dening thinks that this was at either "Ooa or Hekeani" valley on either side of Hana'upe.

l'arbre à pain, dont le fruit est leur nourriture presque exclusive…." Gracia (1843:139) says "...leurs vallées leur fournissent le *taro* qui est un manger excellent, et plus encore l'arbre si bien désigné sous le nom d'*arbre à pain*, … dont le fruit…nourrit abondamment et délicieusement la plus immense partie de ces belles îles de l'Océanie." Thomson (1980:9) notes the co-occurrence of breadfruit and people, but has the causality reversed: "The vallies generally stretch almost from the centre of the Island to the sea, and in every valley where breadfruit is to be found, the natives have taken up their abode."

Thomson further describes breadfruit:

> "[ca. 1840] Breadfruit. In these Islands is said to be superior to that of any other. Here, as throughout Polynesia, it is the staff of life. The tree bears a large crop in February, which the natives preserve in pits. The fruit is gathered by a long forked pole with a small hoop net fixed underneath the prong to save the fruit firm being bruised; after it is all collected, it is scraped, if not completely ripe, a small piece of stick is driven into the fruit to hasten it; after it is scraped, it is left for a day or two till it softens a little, when the cores are taken out, it is then thrown together in a heap, and covered with leaves for a few days till it ferments, when it is thrown into pits, lined with leaves, and covered up, to form their supply for the coming season. Breadfruit thus preserved is called *ma* and quantities are now in the pits which have been there for many years."
>
> "Besides a large crop, the tree bears two smaller ones in the course of the year, so that except a week or two, now and then, we have a continual supply. If the crop in February should prove small, or individuals have few trees, some more is preserved from the small crops. The gum which exudes from an incision made in the bark or the tree is used in making canoes water tight; the inner bark of the young boughs is made into cloth. The average weight of a breadfruit is 4 pounds 15 ounces, although many grow to a much larger size; they are often found from 8 to 9 pounds, and one which I obtained weighed 10 pounds 8 ounces, and measured twenty-six inches in the shortest and twenty-nine inches in the largest circumference; it lost three pounds in the process of cooking, and one pound deducted for skin and core, leaves enough to make a very substantial meal."[23] (Thomson 1980:16)

Tautain (1897:549, footnote 1) claims that breadfruit produce less and have smaller fruit than at Tahiti, because

[23] Gracia (1843:221) notes a variety of breadfruit weighing 15 pounds.

Table 2. Comparison of breadfruit cultivar names.

Jardin (33 names, 13 unique)	Christian (33 names, 12 unique)	Dordillon (57 names, 22 unique)[1]
amoa	-	-
-	Mei-Auena[2]	aueka
-	-	auiki
-	-	ʻaukohe[3]
-	Mei-Autea[4]	autea
epau-pipii[5]	-	-
-	-	epau hae[6]
euea	-	euea
-	Mei-Haapuau	-
hahaua	Mei-Fafaua[7]	-
-	Mei-Hetutu	-
-	Mei-Hinu	-
-	Mei-Hoi[8]	hoi
-	-	huekaha
huihui	-	-
-	Mei-Kakano-koe[9]	kakano koʻe
-	-	kakapuau
kauhiva[10]	-	-
kavékavé-ahéké	-	-
kiekie	-	Kiʻekiʻe[11]
kihohaa	-	-
kiitahi	-	-
-	-	Kikiʻifau, ikiʻihau
kipokipo	-	-
-	-	ko
-	Mei-Koka	koka
-	-	kokaa
-	-	kokahe
-	-	kokapa
-	-	kokau[12]
kokaupopoto[13]	-	-
-	-	kokipo
komanu	-	komanu
		komau[14]
koopupu	-	Koʻpupu
kootea	-	-

-	Mei-Koufau	koufau
koui	-	Kou'i
-	-	kua
kuahé	-	kuahe
-	-	Kue'e
-	-	kuio
kuhuvahaka	Mei-Kuuvahane	kuvahane, kuuvahane
kuuhaa	-	Kuuha'a
-	Mei-Kuukou	kuukou
kuu-matuké	-	kuumatuke
-	-	kuupe
kuutaa	-	kuutaa
-	-	kuuuhaka
-	Mei-Maie	mai'e
maikiouhoi	-	Maiki'ouhoi
maoé	Mei-Maoi	Mao'i[15]
-	Mei-Mapua	-
-	Mei-Mohomoho	-
-	Mei-Movai	movai
-	-	muhautea[16]
oha	-	oha
-	Mei-Orihuu	-
-	Mei-Otai	kotai
oukapé[17]	Mei-Ouape	'ou'ape
patiotio	-	-
pihiti	-	pihiti
-	Mei-Piohe	Pi'ohe
-	Mei-Pipi	pipi
-	-	pipitau
-	-	Pita'a[18]
-	Mei-Pitaetae	-
pitaké	-	-
-	Mei-Piti[19]	-
potaha	-	-
-	Mei-Puahi[20]	-
puau	-	Pu'au[21]
puou	-	-
-	Mei-Pupupi	-
-	Mei-Takaha	takaha[22]
-	Mei-Tapaa	-
-	Mei-Tataatoetoe	ta'atoetoe[23]
tavau	-	tava'u
-	Mei-Teve	-
-	Mei-Tioe	tio'e
-	-	toetoe
-	Mei-Tona	tona
-	Mei-Uea	uea
-	Mei-Vevee	veve'e[24]

[1] 1904 dictionary (not thoroughly searched); where a dash occurs in this column, the cultivar was not listed in Dordillon.
[2] *'au 'eka/'au 'ena* = turmeric leaf.
[3] Lit. bamboo leaf.
[4] Lit. white leaf.
[5] Lit. sticky sap.
[6] Lit. continually sappy.
[7] *haha'ua* = manta ray.
[8] *hoi* = *Dioscorea bulbifera.*
[9] Lit. seedless, a curious name given that seeded breadfruit are thought to be a post-contact introduction.
[10] Lit. grayish.
[11] *kiekie* = *Freycinetia spp.* Dordillon seems to have mistakenly inserted the glottal stops here.
[12] Lit. stem, petiole, peduncle.
[13] Lit. short stem.
[14] "espèce de fruit à pain petit et oblong" (Dordillon 1904:164).
[15] Lit. native.
[16] Lit. pale.
[17] Lit. *kape/'ape* leaf.
[18] "fruit de *mi'o*[*Thespesia populnea*]; espèce de fruit à pain très petit" (Dordillon 1904:227).
[19] Lit. tight, close together.
[20] *Puahi* = sandalwood
[21] "espèce d'arbre à pain dont le fruit est très gros" (Dordillon 1904:235).
[22] Lit. frizzy or curly hair
[23] Lit. spine of the *toetoe* crab
[24] Lit. to peel

Mei or *Artocarpus altilis* (breadfruit). Photo: D. Addison.

the climate of the Marquesas is less humid. Robarts (1974:271) writes of breadfruit that "if the weather is over hot, a great number of the fruit drops of before they are ripe."

Tautain writes of the late nineteenth century that the Marquesan diet was almost completely composed of breadfruit (more than two kilograms per person each day) and that an insignificant amount of land was cultivated:

> "L'alimentation du Marquisien se compose presque uniquement du fruit de l'arbre à pain. La quantité de terre cultivée est insignifiante. On ne s'occupe point de l'igname, ni de la patate douce, encore moins du *ti* (*Dracaene australis*), et d'ailleurs ce ne seraient encore que des hydrocarbonés.
>
> "Le cochon, qui pullule au point d'être une plaie, n'est mangé que dans les fêtes, où on en fait de véritables hétacombes; la poule, la chèvre, si communes pourtant, ne sont pas mangées. Le poisson, d'ailleurs mangé ou cru, ou plus ou moins putréfié, ne sert que d'assaisonnement au plat national, la popoi, la seule forme sous laquelle on mange le fruit de l'arbre à pain. Je dis la seule forme, car les quelque fruits mangés grillés ou sous forme de kaaku ou autres plats n'ont pas plus d'importance que chez nous les desserts ou les entremets sucrés.
>
> "On distingue deux popoi: la popoi *mei* et la popoi *mâ*. La popoi mei se fait avec le fruit de l'arbre à pain cuit et pilé avec un peu d'eau et auquel on incorpore une certaine quantité de mâ. On ne peut en avoir que pendant la saison des fruits. Le mâ est du fruit d'arbre à pain conservé dans des trous creusés en terre, garnis de feuilles et fermés par des feuilles et des nattes recouvertes de cailloux. Le mâ se conserve très longtemps, il y a du mâ de trente ans et plus; mais cela ne va pas, on le comprend, sans certaines fermentations qui mériteraient d'être étudiées, et parmi lesquelles on peut reconnaître une fermentation acide et une fermentation putride. Le mâ, jaune, un peu grisâtre au début, brunit peu à peu; vieux mâ est noir comme du cigare et répand une odeur infecte. Il a parfois un goût tellement violent que même les Marquisiens sont presque incapables de l'avaler, non seulement pur, mais même mélangé de mâ plus jeune ou de fruit frais.
>
> "On peut estimer à un peu plus de deux kilogrammes la ration journalière de popoi du Marquisien. La popoi ne se mange jamais seule. A côté de la calebasse à popoi il y en a une plus petite qui contient l'*inai*, le mets d'assaisonnement: chamarrons, crabes ou homards crus, poissons crus, frais ou pourris, avec de l'eau de mer seule ou mêlée de lait de coco. L'inai n'est pas un plat volumineux; ce n'est réellement qu'une sorte d'assaisonnement.
>
> "Il est évident que cette ration ne saurait être comparée en rien à la suralimentation des phthisiques, et qu'elle constitue une triste nourriture pour les enfants du premier âge. Il est vraisemblable que les fermentations diverses subies par la pâte du fruit à pain jouent un rôle dans l'adaptation de milieu intérieur au microbe de la tuberculose …" (Tautain 1898:312-313)

Robarts (1974:300) writes that "If a Chieftain at the grand gathering of the Breadfruit gets one Tu'ne of Breadfruit from his trees and one Ma'nu of Coco nuts full grown for keeping the year round he is deemed by his tribe as a great man, as their riches consists in the produce of their hands, the Breadfruit is preserved for the general good in case of famine." Crook (1952:cxxix) writes that "some of the chiefs collect several mannes of breadfruit, and a tinne having been known to be gathered at once."[24]

Jardin (1862:46) names thirty-three breadfruit cultivars and notes that they are distinguished by things such as: "the height and bearing of the tree; the degree to which the leaves are incised or not; the size of the fruit; the depth of green of the fruit; the degree to which the skin is rough or not; the length of the peduncle; when the fruit ripens, etc." He lists: "maoé, puau, koui, kuuhaa, puou, koopupu, pihiti, euea, kuu-matuké, kootea, oukapé, oha, komanu, kuhuvahaka, kauhiva, pitaké, potaha, kihohaa, huihui, tavau, kavékavé-ahéké, hahaua, kiitahi, kipokipo, kuutaa, maikiouhoi, epau-pipii, kiekie, kuahé, kokaupopoto, patiotio, amoa." The names were provided to him by a "*tuhuka* that had a good knowledge of plants on his island" (Jardin 1862:47).

Christian (1910:208) writes of the "Bread-fruit tree, of which there are thirty-three varieties: Mei-Kuukou, Mei-Maoi, Mei-Autea, Mei-Koufau, Mei-Mohomoho, Mei-Vevee, Mei-Tapaa, Mei-Orihuu, Mei-Kuuvahane, Mei-Puahi, Mei-Pipi, Mei-Haapuau, Mei-Fafaua, Mei-Otai, Mei-Auena, Mei-Hetutu, Mei-Maie , Mei-Pupupi, Mei-Koka, Mei-Hinu, Mei-Takaha, Mei-Tona, Mei-Tataatoetoe, Mei-Ouape, Mei-Hoi, Mei-Piohe, Mei-Mapua, Mei-Uea, Mei-Movai, Mei-Tioe, Mei-Kakano-koe, Mei-Piti, Mei-Pitaetae, Mei-Teve." The cultivar lists of Jardin and Christian have few entries in common. Adding a partial list from Dordillon brings the number of individual cultivar names to 80 (Table 2). Even allowing for the same cultivar having different names on Nuku Hiva and Hiva 'Oa and for changes in names in the 50 years between Christian and Jardin, there was a remarkable amount of diversity in Marquesan breadfruit cultivars. This argues for the intensity of cultivation and importance of this cultigen.

[24] See earlier section on counting and its complications (*Rapa Nui Journal* 20:118). A *tini* would be 40, 000-80,000 and a *mano* perhaps a tenth of that.

Delmas (1927:37) lists "Mumea" as breadfruit's mother. No less than three deities, "Ihitapu, Tukuu, Kaumoa," caused the breadfruit to produce: "font fructifier les fruits à pain en général, haa ueue mei" (Delmas 1927:42). And "Honoiti" especially protected the young fruit: "protège plus spécialement les jeunes fruits à pain" (Delmas 1927:42). In Taipivai, Tikimau was a *me'ae* well inland: "bien loin sur la montagne." The god for this *me'ae* was Tahiatautua[25] who was endowed with great power to make the breadfruit trees produce: "doué d'une grande puissance pour faire fructifier les arbres à pain" Delmas (1927:98). Also at Taipivai, Tauavahiaki passed for a "grand" god "propre" for the whole valley, and he also made the breadfruit trees grow well.

Mā

Large amounts of breadfruit were stored in pit silos as a pickled paste. Crook describes *mā* making at length:

> "[ca. 1798] The Breadfruit is their staple article, and the only one which they treasure up against times of need, although it is very seldom planted by them. Of this, they have four successive crops in a Year; the principal one, which is in January, serves to distinguish and to count their Years, being called Meie nue, or the great breadfruit. At this season, before the breadfruit is ripe, they gather it, by climbing the trees, and by hooking off the fruit, separately, and carefully, into a hoop net, to prevent it from being burst, or bruised, which would render it less fit for preservation. They tie together two pieces of long grass, at the middle; and at each of their ends, form a sliding knot; which they draw home, round so many breadfruit. Their term for a knot, which is pona, hence comes to signify that number, by which they always count the breadfruit, in order to ascertain what quantity they have in store; reckoning so many ponas to one Ou, ten Ous to one Manne, ten mannes to one Tinne, which means at different islands, from 40 to 80 thousand. They hang the pona's of fruit upon a pole, to be carried from the place where it is gathered, the load being on the middle of the pole, if carried by two men, on both ends of it, if by one man; who in this manner will support an astonishing weight. Pits having been dug in the Ground, either within, or near their habitations, of a circumference and depth proportioned to the magnitude of the Stock, the fruit is stored in them and counted as it is deposited. It is on this occasion that they have occasion for their higher numbers; some of the chiefs collect several mannes of breadfruit, and a tinne having been known to be gathered at once …
>
> "The pit being closed up with branches and earth, the breadfruit fomented, and becomes what is called Ma; at the Marquesas; being crumbled into rough morsels. When in this state, the pit is opened; and as much taken out as there is need to use, the rest is again covered up. With the Ma, mixed with other articles,[26] puddings are made, in the manner described in the appendix to the Missionary Voyage." (Crook 1952:cxxix)

In May 1804, "as the Bread fruit was nearly fitt for gathering, I dug a new store pitt ready to receive my crop of fruit." It was "at the back of the house" (Robarts 1974:140). He describes *mā* making as follows:

> "They gather the fruit with a long pole forked at one end, to which is fixd a small net to prevent the fruit from being bruised. They have also a Hoop with a net run on it with a line over some limb of the tree. When full, the net is lowerd down and the fruit is conveyd to the side of the pitt for its reception, where they have wigwams built to sleep in during the harvest. They break of the stalks of the fruit and scrape off the rough skin with a sea shell ground at one end to get an edge to cutt. These shells are the same as are brought to England and are used to adorn mantle Pieces. They are brown and dark spotted. They work night & day untill the scrapeing is done. The Bread fruit is hove in heaps in a place made for the purpose lined with cocoa nutt branches and coverd over very clean and carefull, and the heat of the fruit turns them soft in one night when coverd up in the above manner.
>
> "Next day every one is employd takeing out the cones [cores] which are of a long oval shape. In this state the fruit is very sweet, and a fine syrup discharges, which would make good vinegar. They have another square place of about two feet, well lined with branches. Into this they heave the fruits as it is cleand from the Core. When all is done, it is well covered up so that no dirt can go in. Stones is then put on all to press it, and in a few days it becomes firm of a fine yellow color. In the mean time, the store pitt is cleand out. The soil being of a marle or loom Kind, the sides of the pitt is smooth and hard and is trimd with large pearl oyster shells, which cutts the earth smooth, and even the large store pitts are 25 or 30 feet deep and 12 feet square.
>
> "Now the tee [*ti, Cordyline fruticosa*] leaf becomes very usefull, as they have no leaf that will

[25] Tahia is a common women's name and suggests a female deity, although Delmas uses the word "dieu" and not "déesse"

[26] Old people on Nuku Hiva have told me that just about any starchy crop can be pounded with *mā* to make *popoi*, and that it was when breadfruit was scarce between seasons. Crook here suggests the antiquity of this practice. I have only seen *popoi* made from breadfruit or manioka (*Manihot esculenta*).

answer the purpose so well. These leaves are pind together about three thick with Bamboo pins. Their lenght and shape are exactly like the lining that the tea chests are lined with when they arrive from China. The bottom of the Pitt is laid with these leaves, and one lenght of upright leaves is placed all round. A man washes himself clean and goes into the Pitt. The provissions [are] Hove into the Pitt, and the man below treads it down, placeing the lineing leaves as he rises till all is finished. He then covers all down close with plenty of leaves and then puts about a foot thick of clay on the leaves and sprinkles water on it and then treads the clay down close all round. And then stones is hove in all over, and then water is tracked in gutters, and the Pitt is filld with water, and let lay Perhaps for two years. Then it is opend to inspect into the leaves. If they begin to fade, new leaves are put in, and the old ones taken away, and more provissions hove in if they have any to spare from the common stock, for the large pitts are Kept against a scarce time, as is frequent the case in these Isles.

"This food will Keep good for forty years in the ground with repairing the lineing and at times putting in some fresh food on the top.[27] The juice is sour as vinegar and in a manner tans the leaves, which makes them last so long. I have eat some of this old store at one of my fathers house. It was black as turf that I have seen burnt in Wales and Ireland, but not sour like food of 2 or 3 years old. It was mellow with age. I enquired how many years old this food was. My Grand father answered that it was gatherd some years before my father was born, who was then about 30 years, and, had there been much in the Pitt, it would have been good for some years to come, but it was soon done, for the famine was very sharp." (Robarts 1974:271-73)

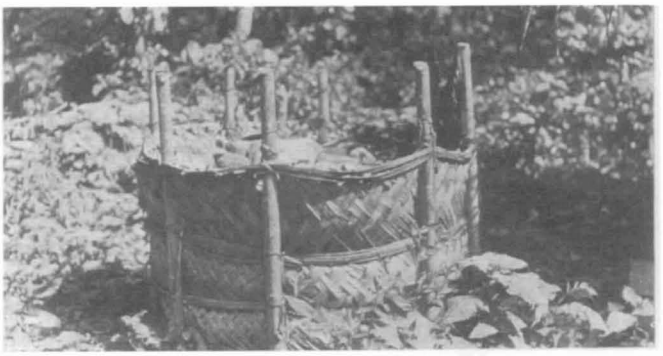
Lisiansky's (1814:84) describes *mā* pit-silos:

"The magazines are merely deep holes dug in the ground, and covered with leaves, clay, and sand." Krusenstern may have confounded earth ovens and *mā* pit-silos:

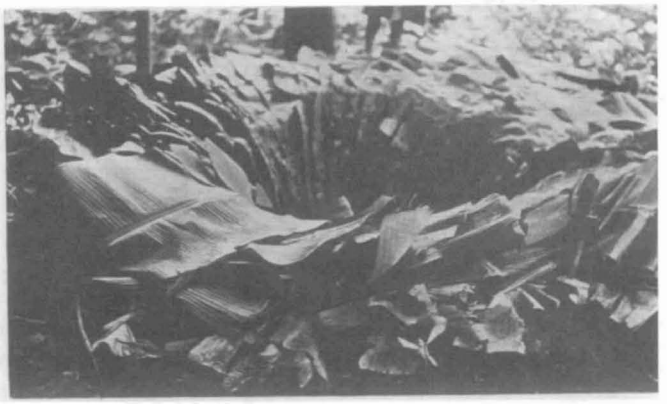
> "From ten to fifteen paces from their houses are several holes, paved with stones and covered over with branches of trees and leaves. In these they keep their provisions, consisting chiefly of baked fish and of sour pudding, a kind of dough made of the taro root and breadfruit."[28] (Krusenstern 1813:161)

[27] Jardin (1862:47) was told that 100-year-old *mā* was perfectly fine to eat.

[28] Another indication of *popoi* made from other than breadfruit.

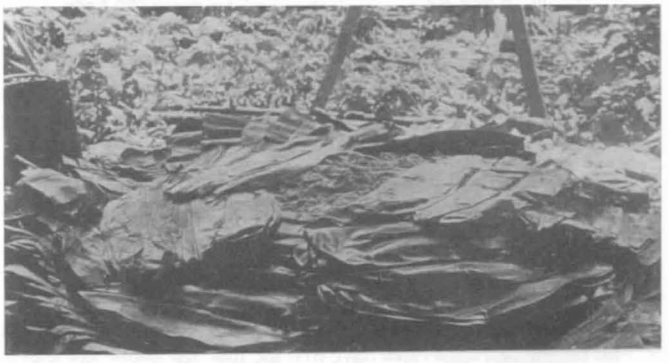


Making *mā*: stage one initial fermentation and draining (Handy 1923).



Making *mā*: pit lined with multiple layers of leaves (Handy 1923).

Making *mā*: pit filled with drained *ma* (Handy 1923).



Making *mā*: pit filled and almost completely covered with *ti* leaves (Handy 1923).

Langsdorff's description is the best from the Russian expedition:

> "[1804] The ripe bread-fruit will not keep good many days: in times of great abundance, therefore, it is cut into small pieces, when a hole is made in the ground about eight feet long by four broad, and five or six feet deep, which is paved with large stones, and the pieces of fruit thrown into it. A strong fermentation ensues, and forms a leaven, which will then keep for months. This food is called popoi."[29] (Langsdorff 1813:125)

Gracia describes *mā* making as taking place:

> "[ca. 1840] two three or four times a year. They gather by family, each at their property, in the mountains or in the valleys. In a small enclosure surrounded by rocks to keep out the pigs, have been made one two three four or five enormous holes in the ground ten or twelve feet deep and as wide, lined with ti leaves and covered with more ti leaves and rocks … et c'est là ce qu'on appelle le *mâ*, où l'on va puiser pour en faire la nourriture quotidienne de la famille. … the ma is cooked in oblong loaves and eaten by itself or mixed to make popoi." (Gracia 1843:140-141)

Delmas (1927:40) names Tokehenua[30] as god of those that dig pit-silos for *mā*. "Tuhuka ua ma"[31] was one of seven classes of "principaux artistes" listed by Delmas (1927:940).

Delmas (1927:98) mentions Porter's incursion into Taipivai and says that in the following years the "peuplade du haut de la vallée" dug an enormous *mā* pit-silo for a food reserve. Stevenson (1971:35) claims that *mā* "pits forty feet in depth and of proportionate bore are still to be seen, I am told, in the Marquesas."

Tautain (1897:549-50) describes *mā* pit-silos at length:

> "Quelquefois dans la construction même du paepae, on ménagé une sorte de puits qui se trouve ainsi avoir des parois de pierres. C'est le silo destiné à la conservation du fruit à pain fermenté, de ce *ma* qui ne constitue pas seulement l'aliment des saisons sans fruit, mais qui entre aussi *obligatoirement* pendant la récolte même dans la fabrication de la popoi journalière.
>
> "Plus souvent le silo est en dehors de l'habitation à quelque distance, quelque-uns sont cachés dans les brousses. Le plus grande nombre de ces fosses simplement creusées en terre n'ont qu'une garniture de feuilles de cocotier nattées et de feuilles de ti (*Dracæna*). Mais on en trouve cependant d'un autre type, ceux qu'on appelle *pakeho*. *Pakeho* veut dire revêtir de pierres, revêtement de pierres (à la façon de nos puits). Ce mot dérive de *pa*, mur, et de *keho*, nom d'une roche plutonienne (basalte ?) qui se brise facilement en éclats assez droits pour que sans outillage on obtienne par percussion des cubes assez bien faits. Les silos qui ont ce revêtement sont rectangulaires et non circulaires. En dehors du silo à ma familial, du silo dotal dont nous avons parlé ailleurs, on trouve encore des silos collectifs appartenant à toute une vallée et auprès desquels se trouve le paepae d'une case destinée aux gardiens. Ces silos pouvaient, à en juger par les traces qu'ils ont laissées, atteindre des dimensions considérables, mais impossibles à évaluer aujourd'hui. Ces silos se remplissaient, sur l'ordre des chefs, lorsqu'au moment d'une belle récolte des signes positifs, ou des présages, ou des prédictions faisaient songer à une disette plus ou moins proche. Les chefs parcouraient la vallée, choisissaient sur les diverses propriétés les arbres à pain les plus chargés et ayant les plus beaux fruits et mettaient le 'ahui ou kahui (cf. Rahui de Tahiti) sur ces arbres. La récolte se faisait alors à mesure que les fruits arrivaient à maturité et sur ordre, et le produit des cueillettes était immédiatement transformé en ma enfoui le silo. La disette arrivée, la distribution était faite à mesure des besoins par des gens qui en étaient spécialement chargés. On sait que le ma bien soigné peut durer de très longues années."

Tautain (1898:436) writes that the ti-leaf lining on a *mā* pit-silo should be changed every 5 years. If properly made the *mā* could last at least 40 years. He (1895:644) writes that at the birth of a child a *mā* pit-silo was made, and that the *mā* would be used at the marriage. He (1897:550) also mentions that *mā* pit-silos were given as a dowry.

Ti and Fern Root

The passages in this section appear clearly to pertain to *Cordyline fruticosa*.

Crook describes a *ti* oven, and provides the only evidence of it being cooked with fern root:

> "[ca. 1798] The Te, called here Ge,[32] has a root resembling a parsnip, and of a delicately sweet taste, when baked. It is put, with a species of Fern Root,[33] into a very large oven in the ground, before daylight, and not taken out till the forenoon of the next day. Large Stones are put into the Oven, for this purpose, than for any other. All

[29] Langsdorff has confused *popoi* and *mā*.
[30] Lit. earth worm, but *toki henua* would mean earth adze.
[31] *Mā* pit-silo specialist.

> the Wood of a large tree is laid underneath, and set on fire, when the whole is prepared. The heat is so intense, that the nearest trees are scorched, and their branches destroyed thereby. Sometimes, after the Oven is covered over, it bursts, and makes a report like a Cannon." (Crook 1952:cxxx)

Robarts (1974:256) writes that the "tee plant is also grown by them." He describes it as:

> "[ca 1800] a root, something like a parsnip to look at when young. The stem grows up straight, five or six foot high. The leaves are of a dark green of a long oval shape, resembling the leaves that tea chests are lined with. The Root grows very large. Some will weigh 50 or 60 pounds, and when baked are very sweet. I have made excellent rum from this root."[34] (Robarts 1974:246)

By ca. 1840 Thomson (1980:17) claims that Marquesan did not use ti, but on other points he seems to have been not very observant or misinformed: "Dragon Tree. It is not used by the natives, but I am sorry to say that its root is distilled upon Nuuhiva by unprincipled runaway seamen, to the injury of the natives, and serious detriment of the shipping."

Christian (1910:107) notes that "[1890s] … Ti (Dracaena terminalis) … [is] valued for its handsome leaves, used for wreaths and girdles, and for its sweet roots from which a potent liquor is brewed." He also writes that there were "numerous varieties"[35] (Christian 1910:209).

Ha'a/fa'a (pandanus)

The passages in this section appear to clearly refer to *Pandanus tectorius*. Crook (1952:cxxxiv) reports that women "weave the mats, from the leaves of the Farra. The mats are of various sorts, and degrees of finesses, and are used not only to sleep on, but sometimes to cover them when sleeping. Some kinds also are worn by the fishermen at Sea, and some are made into Sails for Canoes." Crook (1952:cxxxi) notes the male inflorescence: "The Fa-o, or prickly palm, is common. A tree, called Henanno, resembles it in every respect, except that it does not produce nuts, and that the heart of this palm, has a very peculiar odour."[36]

Lisiansky (1814:92) may be referring to pandanus: "*Foa* [*fa'a*, *ha'a*?]. This tree produces a very handsome fruit, pieces of which being strung together, are used, on festivals, as wreaths for the head, and ornaments for the neck."

Thomson (1980:18) writes that "the leaves of this tree are used in the manufacture of matts and as thatch for houses, but this use of them has been learned from Tahitians. The common thatch is breadfruit leaves strung upon small bamboos .The ripe cones are strung and worn around the neck as beads" (ca. 1840). Ten years later, Jardin (1862:51) noted pandanus leaves used for a thatch more durable than that made of coconut or breadfruit leaves: "… servent à faire aux cases des indiens des couvertures dont la durée est plus que celles qui sont confectionnées en feuilles de cocotier ou d'arbre à pain." Jardin (1862:51) also writes that pandanus can be eaten and is sometimes made into a paste: "… ce fruit est susceptible d'être mangé, on en fait quelquefois une pâte assez savoureuse."[37]

Vincendon-Dumoulin and Desgraz (1843:208) mention that there were several kinds of pandanus. Christian (1910:210) names three varieties: "Haa-kua;"[38] "Haa-pua;"[39] "Haa-uouo."[40]

Tō (sugarcane)

The passages below appear to refer to *Saccharum officinarum*. The passages have conflicting information on abundance, size, use, and cultivar names.

Crook (1952:cxxx) writes: "Sugar Cane, called To, is cultivated and plentiful; but the lower part containing its sweetness, is greatly destroyed by the Rats." Whereas, Lisiansky (1814:87) writes that sugar cane was "rather a scarce article," his fellow voyager Langsdorff (1813:106) says "sugar-canes are also in abundance, but no attention is paid to cultivating them."

Fleurieu (1801:85) comments that its "sugar is tolerably sweet; it grows to the height of about six or seven feet, and is upwards of an inch in diameter, it is not so yellow as that of our sugar islands; and its knots are closer…it grows

[32] Crook frequently wrote "g" for "k" (see discussion Crook, Greatheed and Te'ite'i 1998:xxxviii). The /t/ to /k/ consonant interchangeability is an unusual one in Marquesan although known in Samoan and Hawaiian. Crook seems to have been the only one to have recorded "*ti*" as "*ki*". The only other Marquesan instance of this consonant interchangeability I'm aware of is Crook's spelling of the a Hakau'i chief's name as both Poutinne and Poukinne (Crook 1952:clviii, clxxi). Perhaps he picked this pronunciation up from his early association on Tahuata with the Hawaiian beachcomber Tama. Crook's dictionary lists "te" and not "ge" (Crook, Greatheed and Te'ite'i 1998:47), and perhaps Te'ite''i corrected its spelling there but did not in the above passage from the "Account."

[33] Crook (1952:cxlv) says that at Vaitahu "The Sumit of the ridge is mostly covered with Trees, and produces a great quantity of the Fern called pahei [*pa'ahe'i* or *puhei*?], of which the Islanders eat the root, in seasons of Scarcity."

[34] After leaving the Marquesas, Robarts (1974:12) made and sold rum on Tahiti. It is not clear if this passage refers to that part of his life, or whether he made it on Nuku Hiva as well. If the latter, it is the first record of distilled alcohol made in the Marquesas.

[35] Perhaps this refers to post-contact introduced ornamental cultivars.

[36] The highly fragrant male inflorescence of *Pandanus tectorius* is called *hinako* or *hinano*. Dordillon (1904:137) also lists *hikano* and *hi'ano*.

[37] The only reference to eating pandanus in this manner for the Marquesas, although well documented for the nearby Tuamotu Islands.

[38] Lit. red (or excellent) pandanus.

[39] Lit. flower (or flowering) pandanus.

[40] Lit. white pandanus.

in the woods, where it receives the rays of the sun only through the thick foliage of the large trees…" Fanning's (1833:211) impression of its size contradicts Fleurieu: "Their sugar cane I certainly think is the finest as well as the largest that is grown." Thomson (1980:19) disagrees: "Sugar Cane. Grows wild, is not of a very good kind; natives are fond of chewing it, for which purpose they sometimes plant it." Porter (1970:53) gives the largest measurements: "The sugar-cane grows to an uncommon size here, it being no unusual thing to see the stalks fourteen feet in length, and ten or twelve inches in circumference. The only used they make of it is to chew it and swallow the juice."[41]

Jardin (1862:54) mentions that sugarcane was cut only for feast days when huge bundles were brought to the feast place and distributed to the participants. His cultivar list is: "to maoi, upau, tuaké, kakamau, koniotété, kikiha, taputu." Christian (1910:209) has the following entry: "To. The sugar cane, of which there are seven varieties" and he lists them as "To-Oniho, To-Tovae, To-Pau, To-Vevemai, To-Uaua, To-Kua, To-Maoi." Only one (*māo'i* = native), or possibly two (*pau*/*upau*), cultivar names are shared between these lists. Perhaps this is a Nuku Hiva influence in Jardin and a Hiva 'Oa and Fatu Iva one on Christian.

Meika/mei'a (banana and plantain)

Cultivars of *Musa* spp. were common in the Marquesas from the earliest written reports on. Bananas are a regular feature of the daily fare of contemporary Marquesans. George Forster (1968:357) noted "several spacious plantations of bananas, in excellent order" on the hills "in the forground" at Vaitahu. Crook (1952:cxxx) writes that: "Plantains are called Meika. They are of many species, and do not at the Marquesas admit of distinction from the Banana. The Roots are sometimes eaten in times of particular dearth. They are sometimes planted."[42] Robarts (1974:275) adds detail on eating banana plants: "In time of severe hunger I have cutt the body of a plantain tree up and baked it and then pounded it to get out the substance, which, after being washd and straind thro many waters, is still very bitter & cold on the stomach."

Table 3. Number of banana varieties grown in the Marquesas according to seven historic sources.

Author	Varieties
Crook	"many species"
Robarts	"several sorts"
Lisiansky	"many sorts"
Porter	"upwards of twenty"
Thomson	12-18
Jardin	26
Christian	names 12

Fleurieu (1801:83) writes that the "plantains are large, excellent, and common." From the same visit, Roblet (Robley n.d.:14) notes that bananas were common. Robarts (1974:246) mentions that "Plantains and tarrah root is tolerable plenty" and notes that there were "several sorts of plantain" (Robarts 1974:255-56).

Lisiansky (1814:91) not only mentions varieties, but gives measurements: "*Maeeca* [*meika*], or Plantains. There are many sorts of this tree here; the fruit of some of which is nine inches long, and seven and a half round." Thomson (1980:16) also mentions varieties and gives measurements "Bananas. Seem to thrive well here; there are from twelve to eighteen different kinds, some of which are very large. A bunch bears from eighteen to 100 bananas, and weighs from thirty to sixty pounds. some banana regularly shaped with every external appearance of being single, weighed 1 pound 7 ounces, but when cut presented two cones; the large one not so sweet as the small bananas." Porter (1970:52) writes that of "bananas they count upwards of twenty different kinds, some approaching very near to the plantains in their appearance, but it is certain that they have none of the latter on the island."[43]

Thomson (1980:17) is perhaps referring to the *huetū* (*Musa troglodytarum*)[44] when he writes: "Mountain Plantain. Is not much esteemed by these natives; it is seldom reared." Jardin (1862:49) contention that bananas were only eaten for feasts seems unrealistic: "les kanacs des Marquises cultivent le bananier, mais ils conservent les bananas pour les jours de fête, ils n'en magnent point habituellement." Given that banana plants produce small quanti-

Table 4. Comparison of banana cultivar names.

Jardin (Nuku Hiva)	Christian (southeast)
éaki	-
hamau	-
hauaua	-
huetu	huetu
kaupé	-
kina	kina
kinukoa	-
koka	-
kokaehu	-
kokakatiu	-
kokanui	-
kokupahiau	-
maei	-
maoi	maoi
moa	-
moepua	-
monokia	-
-	niho-pifa
oka	-
-	onua
oua	-
pako	pako
pehatu*	paafatu*
-	pemu
-	pime
poupou	-
pukokiva	puko-kiva
puou	-
-	tapaahi
-	tataa-i-vao
uhiau	-

*These may be the same name. *Pa'a* and *pē* can have similar meanings.

[41] Porter's measurements are larger than any sugarcane I have ever seen on Nuku Hiva.

[42] Current banana-growing practice in the Marquesas requires that, when production of a clump declines, it be replanted in a new location. Beside this, and harvesting, bananas take little care. Crook's "sometimes planted" may refer to this low maintenance aspect of Marquesan banana cultivation.

[43] I am unclear what "plantain" Porter was expecting.

[44] Christian (1910:209) for example has the entry: "Huetu. The mountain plantain."

ties continuously, it would be an unlikely crop to save only for special occasions, otherwise a great deal of the crop would have gone to waste between feasts. Robarts (1974:279) mentions a method for hastening ripening: "They also have plantains made ripe by burying them in the ground three days when they are full grown."

Jardin (1862:49) lists twenty-six cultivar names "Meika maoi, meika huetu, monokia, poupou, pukokiva, pako, oua, koka, hamau, puou, pehatu, kaupé, hauaua, moepua, éaki, maei, uhiau, kina, oka, koka, kokakatiu, kokupahiau, kokaehu, kokanui, moa, kinukoa." Christian (1910:209) implies that there were more cultivars he didn't name: "Meika, Meia. The banana (*Musa*). These are some of the numerous varieties of the Marquesan banana: Meia Maoi, Meia Onua, Meia Kina (The China banana), Meia Pime, Meia Paafatu, Meia Pemu, Meia Tapaahi, Meia Niho-pifa (Literally Cattle-horn, a large variety), Meia Tataa-i-vao, Meia Pako, Meia Puko-kiva."[45]

Vincendon-Dumoulin and Desgraz (1843:207) report that bananas were eaten fresh or cooked. Jardin (1862:49) also says bananas were eaten raw and cooked. Dessert banana cultivars certainly could have been introduced by the 1830s,[46] but Parkinson's contact-period description of banana use at Tahiti indicates that indigenous cultivars were eaten both ways. The same is probably true for the pre-contact Marquesas:

> "*Sidney Parkinson*, draughtsman to Mr. *Banks* on *Cook's* first voyage, says, in speaking of the plantains and bananas that were met with at *Taheitee* and the *Society* Islands, that 'they reckon more than twenty sorts which differ in shape and taste; some of these are for eating raw, and others best boiled, and will serve instead of bread…' (*Journal of a voyage to the South Seas, &c., London* 1773. Page 47)" (quoted in Fleurieu 1801:79)

Ēhi (coconut)

Cook (1961:372, italics mine) writes of Vaitahu: "The Refreshments to be got here are Hogs, Fowls, Plantains, Yams and some other roots, Bread fruit and *Cocoa-nutts, but these last are scarce*." Fleurieu (1801:81-82), however, points out that the French at Vaitahu "by no means experienced this scarcity of cocoa-nuts [mentioned by Cook], in truth, they saw, in the vicinity of the north cove, only a small number of palms of the species of those which bear this fruit; but, to judge by the quantity of nuts which the natives hastened to bring them, and of which may be said that they were prodigal, there is reason to think that the tree is very common in the districts more remote from the sea." Robarts (1974:246) shared Fleurieu's opinion of Marquesan coconuts: "Coco nut trees are plenty. The nuts are the largest and sweetest of any I ever found in any Part of the globe."

Crook writes:

> "[ca. 1798] Cocoa-nut Trees, here called Aihe, are always planted, and a supply through the whole Year, if used with proper care, although less abundant and, somewhat less luxuriant than in Islands which have a greater extent of low ground. The Marquesans are not fond of drinking the liquor contained in the Shell of this fruit, used scarcely any thing but spring water to satisfy their thirsts, but they use the Cocoa nut juice along with their various kinds of pudding, and turn much of it to Oil, to anoint their skins." (Crook 1952:cxxix)

Gracia (1843:221) writes that of trees "the most esteemed by the natives and useful are coconut and breadfruit." Thomson (1980:17) provides some of the uses of coconut, but his "chiefly in seasons of scarcity" seems contrary to the other passages in this section and the section on cooking where many dishes using coconut are described: "Cocoanuts. Are eaten by the natives but chiefly in seasons of scarcity; their principal use is to fatten pigs and fowls, and as articles of trade with the shipping; with the oil they besmear their persons and clothes when dressing for public occasions."[47]

Table 5. Comparison of coconut cultivar names

Jardin (Nuku Hiva)	Christian (southeast)
atuau	-
-	Auoi
éhiéhua	-
haniaoo	-
-	Hatetea
hauméké	-
-	Kaha
-	Kata
-	Kivakiva
-	Kokotahi
-	Kuakua
mamaimu otea	-
moraiéhu	-
nana	-
-	Niu-manao
ootahi	-
-	Panu
tiéhutiéhu	-
tokaoe	-
-	Uhiau

No cultivar names are shared between the lists of Jardin and Christian. Jardin (1862:50) lists eleven coconut varieties: "Les naturel des Marquises distinguent onze variétés de cocotier, ce sont: l'éhi atuau, tokaoe, mamaimu otea, haniaoo, ootahi, moraiéhu, nana, hauméké, éhiéhua, tiéhutiéhu." Christian (1910:208) tries some etymology: "Ehi. There are ten varieties of coco-nut palm. The general word for the tree in Polynesian is *Niu*, but on

[45] As with sugarcane, there is little correspondence between the lists of Jardin and Christian. Again, this is probably at least partly due to the names likely being on Nuku Hiva and Hiva 'Oa/Fatu Iva respectively.

[46] Jardin's list includes "*kina*" (= China, Chinese), a name now associated with the Chinese or Williams cultivars. Christian's list from the 1890s includes "*kina*" as well as "*pime,*" a name now associated with Bluefields cultivars.

[47] There is more on cosmetic coconut oil in the *'eka* section below.

Futuna the *flowers* of the coconut-palm are called *Efi* or *Efiefi*." His cultivar list is: "Ehi-Panu, Ehi-Kuakua, Ehi-Hatetea, Ehi-Uhiau, Ehi-Niu-manao, Ehi-Auoi, Ehi-Kokotahi, Ehi-Kata, Ehi-Kivakiva, Ehi-Kaha."

Christian also provides the names for the stages of coconut fruit development:

> "[1890s] Koie. Early stage.
> "U'e. A drinking nut.[48]
> "Kahukahu. A nut with kernel devoped.
> "Ehi-ua. When very little water is left within.
> "Titio, Titipu, Tupu. A sprouting nut. On Uapou *Uto*.
> "Fano, Hako. An empty nut.
> "Puoo, Pororo. A nut with a kernel solid, fully developed, and fit for making copra." (Christian 1910:214)

Porter's (1970:51) understanding of a Nuku Hiva tradition was that coconut was introduced "from an island called Ootoopoo, by a god named Tao, many generations since. This island is supposed by them to lie somewhere to the windward of La Magdalena …."

Noni

Crook describes the cooking and eating of *noni*:[49]

> "[ca. 1798] The Nano, producing a fruit which has been compared to a Sour Sop, is a small tree, the wood of which grows crooked, and the leaves are oval, about 9 Inches by 4, smooth, and of a dark green colour. The fruit grow at the sides of the branches, of the size and nearly the shape, of a large Egg. When ripe, it is white and clear in colour; full of hard seeds, like those of a melon; with a bitterish juicey substance between them. The outside is covered with protuberances. Some which are much less filled than others, with seeds, are by far the best food. The fruit is beaten soft, and roasted in embers; the Seeds are thrown away." (Crook 1952:cxxx)

Jardin (1862:55) confirms that noni was "cooked on coals" and adds the detail that it was "eaten for some sicknesses."

Tapa (bark cloth)

Fleurieu describes men's daily dress, the *hami*:

> "[1791] the Mendoçans are, in general, absolutely naked; for we cannot give the name of clothing to a piece of cloth made of the bark of a tree, which after having, like a girdle passed once round the loins, falls down before and between the thighs: the climate requires no other garment; and the intention of a piece of drapery appears to them to satisfy modesty." (Fleurieu 1801:99)[50]

He writes that tapa was made from the "paper mulberry tree" (*ute*, *Broussonetia papyrifera*) and breadfruit, and that some was dyed yellow (Fleurieu 1801:122). Robley notes that breadfruit was used for making cloth (Robley n.d.:13).

Crook describes which plants were used for which kinds of tapa:

> "[ca. 1798] The cloth of which these coverings are made, is principally manufactured from the Bark of the Oute, or Chinese paper Mulberry Tree; the Heappo, [*hiapo, Ficus prolixa*], or wild fig tree; and the Meie, or Breadfruit Tree.[51]
> "Of the first, are made different kinds of cloth. The Kahou Nogu, is the whitest; and is naturally thick and rough, but pliable. It is common, to double it, by fastening two large pieces together, at all the edges, with strings of the same Cloth. The Kahou Buko is less white, thin and well beat, so as to unite pieces together, to make it thicker.
> "The Kahou Heappo [*kahu hiapo*], which derives its name from the Tree; form the bark of which it is made, is of a medium thickness and warmth, of a reddish brown Colour, and naturally of a sweet scent. It is usually made into Hames [*hami*]." (Crook 1952:cxvii)

Crook (1952:cxxx) points out that "Oute, or Chinese Paper Mulberry, is cultivated, as elsewhere in the South Sea Islands; but the Cloth which is made from its bark, is inferior to that of Otahite" and that the "mallets with which they beat their cloth, are not so neat, nor regular, as those of Otahite. They are used by the women only" (Crook 1952:cxxxiv).

Robarts details the making of tapa:

> "[ca. 1800] They grow cloth Shrubs, which soone will run about twenty foot high. The bark is taken of to make cloth. The cloth made from these plants is very white. It is beat out on a flat log or smooth stone with a round stick with lines cut round it. When they have beat enough bark to make a cloth, they trim the pieces and lay them by for the next day and then beat again on the third day. They Join the pieces edge to edge and beat them gently together and lay the work by.

[48] Several people on Nuku Hiva have suggested to me that this is pronounced *'ue*. Drinking nuts are also termed *'o'e* (or *koke*).
[49] *Morinda citrifolia* bears the only Marquesan fruit I know of that fits Crook's description.
[50] Crook (1952:cxvii) describes several kinds of *hami*.
[51] *Ute*, *hiapo*, and *mei*.

> On the fourth day they beat the cloth from side to side, until the Joinings are not seen. The cloth is become one Piece. A large cloth tenor twelve feet square will take several days to make. The long 20 foot shrubs are beat out for bandages for the Chieftains and those of 10 feet long to make turbans for the Ladies &and light bandages for the males. The smaller plant works up for cloth." (Robarts 1974:255-56)

In 1813, Krusenstern (1813:131) noted at Hakau'i on Nuku Hiva "several larger plantations of the taro root and cloth mulberry." Lisiansky (1814:84) writes that "the rich have small gardens, or rather enclosures, round their houses, planted with trees, of the bark of which a sort of cloth of made." Langsdorff (1813:107) notes that tapa was made from "mulberry." Lisiansky (1814:91) relates of breadfruit that "From the bark, a sort of thick brown cloth is made, which is sometimes dyed yellow." He also describes the two other plants used for tapa:

> "*Eooty* [*e ute*]. From the bark of this tree, the best cloth is made. The manner of manufacturing it is similar to that which has been described by several navigators, as practiced in the Sandwich Islands." …
>
> "*Hiaba* [*hiapo*]. A large tree, the bark of which is used for making short pieces of cloth, such as the islanders sometimes tie round the waist." (Lisiansky 1814:92)

Porter describes tapa making:

> "[1813] Their implements for the manufacture of cloths consist only of a beater and a smooth log. They are both of that kind of hard wood of which the war clubs are made. The beater is about eighteen inches in length, one end of which is rounded for the handle, the rest is squared, and slightly grooved the length of the square. The whole operation consists of beating the bark out on the log to the size required, keeping it wet and gently stretched with one hand, while the other is employed with the beater. This employment is left to the old women, who will make three outer garments or cahoos [*kahu*] in the course of a day. The cloth is remarkably neat and regular, nearly as strong as fine cotton or linen, but will not bear washing more than once. It is worn about a week before washing, after being washed, it is beaten out again to give them a gloss and strength." (Porter 1970:121-122

Presumably he refers to *ute* when he writes: "the plant with which they make their finest cloth, which grows nearly as thick as the wrist, and is highly esteemed by them" (Porter 1970:37).

Around 1840, tapa appears to have continued as an integral part of Marquesan daily life. The attention with which *ute* plants were tended is apparent in Thomson's description:

> "Paper Mulberry. Is cultivated with great care, for the manufacture of cloth; plants which have a tendency to grow crooked are trained up straight, and the lower part of the tree is stripped of its leaves and branches so that the bark may be as whole and good as possible; after the bark is taken off, the inner part is separated from the outer by a sharp shell, it is then steeped in water, after which it is beaten by females, upon a stone with a wooden mallet, slightly grooved with grooves proportioned to the fineness of the cloth to be made; that for the head dress of females is made as thin as lace. The texture of this cloth resembles that of paper."[52] (Thomson 1980:18)

Thomson describes how tapa was used for clothing:

> "[ca. 1840] The dress of the Marquesan is very simple; a piece of native cloth wound round the loins, the end left to hang down before and behind; that of the men is called a *hami*; that of the females a *kaeu* [*kā'eu*], and is about the size of a handkerchief; it is knotted at the corners at the right side; when not at work, females wear a piece of cloth round their person about as large as a shawl, thrown carelessly round their person and knotted upon the shoulder; often held loose beneath the arm. The head dress of females is very neat; their hair which is long, is collected

Aoa or *Ficus prolixa*. *Hiapo*, a reddish tapa reserved for elites was made from the aerial roots. Photo: D. Addison.

[52] Thomson, writing from Tahuata, describes a stone anvil, Porter mentions wooden anvils for Nuku Hiva, and Robarts who lived at both Nuku Hiva and in the southeast islands notes both. Contemporary tapa making only takes place on Fatu Iva and with stone anvils. Traditionally, perhaps there was a southeast/northwest distinction on this aspect of Marquesan culture.

upon the crown and carefully covered with a piece of fine native cloth, which at a distance has the effect of lace." (Thomson 1980:25)

Thomson describes the scene on a *tohua* when a war victim was being displayed:

> "[ca. 1840] Females also attend in all their rich attire; they seem to attach much importance to the quantity of cloth in which they appear; sometimes it seems quite a load, but when at all moderate in quantity they look extremely neat and clean. The dress for each occasion is a *kaeu* just around the body in pretty neat folds (one which I saw measured 140 yards long and two yards wide!). A large cloth over the shoulder, and some ornaments upon the hand, with a fan or walking staff in hand." (Thomson 1980:30)

The quantity of tapa Thomson describes individual women wearing suggests how much effort must have been devoted to cultivating *ute*. Jardin (1862:21) reports from Nuku Hiva in the mid-1850s that the amount *ute* used required that much care be devoted to it: "l'usage continuel qu'il font du mûrier les oblige à donner plus de soins au mûrier à papier." He describes that almost all of the Marquesans' clothes were made from it and, echoing Thomson, that the lateral buds were removed to ensure a flawless inner bark:

> "…est cultivé avec assez de soin aux Marquises, parce que c'est avec son écorce que les naturels font presque tous leurs vêtements; pour cela, ils ne laissent jamais croître à plus de 10 à 12 pieds et ils ont soin d'enlever tous les bourgeons qui paraissent le long de la tige, afin de ne pas avoir de solution de continuité dans l'écorce dont ils se servent…" (Jardin 1862:48)

Less than a half century later, Tautain (1898:313) reports that the men wore European clothes ("veston ou un tricot mince ou une chemise et un pantalon"), and that women dress as well in imported material.[53] Christian writes of visiting Vaipa'e'e Christmas Eve in a trading ship:

> "[1890s] About sunset the villagers in the upper valley came flocking down to join the fun. Some came dressed in their Sunday best, others swathed in brand-new robes of *tapa* …" (Christian 1910:157-8).

Perhaps this description of tapa is fanciful, or maybe people were still making and using some tapa on 'Ua Huka at the close of the nineteenth century.

Tautain (1895:644) writes that formerly, a plantation of *hiapo* and a plantation of *ute* were planted at the birth of a child. These were for tapa that was put aside to be given at the time of the marriage. The bride would wear all of this tapa at the *ko'ika hu'ona*. Then the plantation would be burned. According to Tautain, this was in effect the dowry: "ces tapa constituaient pour ainsi dire la dot des époux. Ce fait encore nous paraît devoir être retenu."

'Eka/'ena (turmeric)

Curcuma longa was a pre-European introduction to the Marquesas, quite possibly brought by the original settlers. At European contact, it was a valuable and sought after item.

Fleurieu (1801:122) mentions yellow-dyed tapa and people's bodies "painted" with yellow dye. Robarts (1974:256) notes that "They plant Tumerick." On acquiring land, he did as well because "It's very valuable, its being made at this Island only" (Robarts 1974:123). It seems improbable that other Marquesan islands were ignorant of the procedure for preparing raw *'eka* into scented dye. Crook (1952:clxxiv) mentions that the "Valley of Muakke" (Mu'ake) on Nuku Hiva was "celebrated for the manufacture of burnt Ginger," a view suggesting that some prepared *'eka* was more sought after than others. Elsewhere, Robarts hints at this more balanced view; in his section on "commerce" he writes: "on *New'ka'hea'va* they make a perfume of Tumerick, which is made in perfection only buy a particular set of men at peculiar springs of water" (Robarts 1974:261).

Robarts further describes the exchange of prepared *'eka*, although his estimation of its value may be overstated:[54]

> [ca. 1800] And in the month of Nov^{r} & Dec^{r}, they watch the westerly winds, which, as soon as they blow, their canoes being ready fitted out, they set out on a visit to their neighbours of the windward Isles. This perfume is so precious among the windward Isles that they will part with anything to purchase it, Viz., Fine large canoes, live hogs, stone adzes, Large Calibashes with carved wooden covers, neat wooden bowls, chests made out of one solid piece of timber neatly carved, spears, war spades, cloth, Large bandages. This perfume is very agreeable in smell and, when mixt with coco nutt oil which is very sweet on these Isles, they rub it on their body and bandages at their festival times, and the

[53] On Nuku Hiva, I was told by a man in his sixties that when he was married as a young man (ca. 1940?), it was common to see older men wearing cotton cloth *hami*.

[54] Compare Robarts' (1974:151) description of a particular instance when he visited old friends at Vaitahu. He gave a turmeric loaf and received hogs, fish, and tapa. Or, on the same visit at Hapatoni, where he gives a turmeric loaf to his host and receives a "A fine hog was roasted for me and two more at other houses for my passengers" (Robarts 1974:150).

> Ladies that can procure as much as will color their cloth over or half over. It is a great luxury, but it soon fades after a few times of wearing. Its colour is of an orange red. This is the whole of their commerce." (Robarts 1974:261-62)

Crook appears to have had a more realistic idea of its value:

> "Tahouatta is too remote to admit of hostile visits to this Island; but the Natives from thence, come to obtain Ginger, in exchange for Ornaments and Hogs"[55] (Crook 1952:clxv).

At Taioha'e, Lisiansky was visited aboard the *Neva* by the "queen"[56] accompanied by two high-ranking women relatives. They were dressed in yellow tapa (presumably dyed with *'eka*) and had turmeric coconut oil (*pani 'eka*) on their bodies (Lisiansky 1814:75). Porter (1970:62, italics mine) notes that: "They also anoint themselves with cocoanut oil mixed with a red paint made from the turmeric-root, which is here highly esteemed, and *cultivated with much care*." Stewart describes a *ko'ika* somewhere in Hapa'a territory:

> "[1829] Many add to the [coconut] oil the juice of the turmeric, of a pale yellow, or a mixture from the burnt root, which is bright orange – thus imparting, as they imagine, new beauty to the skin, but which is anything but to a civilized eye. Many in the crowds on this occasion were thus adorned; some so completely saturated with oil as to be dripping like naiads just emerged from their fountains, while others were stained with turmeric till they appeared like living masses of saffron." (Stewart 1970:256)

'Eka or *Curcuma longa* (tumeric). Photo: P. Goltra, National Tropical Botanical Garden.

Thomson (1980:19) "Tumeric. Is cultivated and used to besmear their persons at feasts, or other occasions; the natives say it prevents cutaneous disease and whitens the skin; the latter is probably a result of the soap berry which is used with it."[57] Thomson (1980:38) adds another use: "Individuals of rank are embalmed with a preparation of tumeric, cocoanut oil, etc., the body being rubbed every day for about a month."[58]

The traditional importance of turmeric may be suggested by the number of deities concerned with it. Delmas (1927:42) names three different gods associated with aspects of *'eka*: "Auehoo" as the "god of the eka plant;" "Hai is venerated by those who plant eka;" and "Hao assists those that cook eka."

Kava

Crook (1952:cxxx) mentions that "The Karva Root is cultivated."[59] Robarts (1974:256) reports that "among the chiefs the[y] have a deal of the root they use in liew of spirits." He further explains its use:

> "[ca. 1800] The High rank of men have a root which is chewd and then water put in according to the number of persons to drink. It is then workd up and straind and handed round to which they [add] fish, sweetmeat and roasted bread fruit, until they begin to be intoxicated. They then lay down to sleep. It has not the effect, as spirits have, to enliven a man. It makes you stupid and inclined to sleep. But it is soon over. It is very good after a hot days Journey.
>
> "The men of rank frequently form parties of five or six. They retire to their altars, and drink this

[55] It is unclear whether Crook is referring to 'Ua Pou or Nuku Hiva.
[56] The description suggests this may have been Kiatonui's wife.
[57] Thomson (1980:18): "Soap berry. The berry is grated upon a stone, and the juice mixed with turmeric, is used to besmear their persons; the timber is what is generally given to the shipping for fire wood." This is almost surely *koku'u* (*Sapindus saponaria*).
[58] On Nuku Hiva, I have heard this oil (with other scented plants included) referred to as *huhe*.
[59] *Piper methysticum*.

> mixture three or four times a day for about twenty days. Their skin then begins to crack all over them. They are become so weak that they cannot walk without support. They then leave by degrees and begin to eat their food regular and recover their strenght.
>
> "I have been told that two men on the Island of Woo'ah'hunga (Ua Huka) found a large root of this Kind on top of the mountain, and, like two Bacchus's by a pipe of wine, they staid by this root for some months and drank so much that one of them died. The other lived to relate the story."[60] (Robarts 1974:252)

Porter (1970:53) writes: "The *kava* is a root possessing an intoxicating quality, with which the chiefs are very fond of indulging themselves." Kiatonui, chief of Taioha'e, apparently indulged: "[1813] But what was my astonishment when Gattanewa presented himself; an infirm old man of seventy years of age, destitute of every covering or ornament excepting a clout about his loins, and a piece of palm leaf tied about his head; a long stick seemed to assist him in walking; his face and body were as black as a negro's, from the quantity of tattooing, which entirely covered them, and his skin was rough, and appeared to be peeling off in scales, from the quantity of kava (an intoxicating root) in which he had indulged himself." (Porter 1970:24)

Dalton (1995:76) mentions kava drinking in the 1820s. Vincendon-Dumoulin and Desgraz (1843:279-280) also describe it. Thomson (1980:45) describes the *haka'iki* (chief) of the whole of 'Ua Pou Island "Feato is a tall, spare man, notoriously addicted to the use of *kava*. He seems to be in a state of intoxication the largest part of his time." Thomson provides the only information on kava cultivation:

"[ca. 1840] Kava. Is used here in great quantities and larger doses than any of the other Islands; the root is broken by mastication, and the juice wrung out by twisting it between the hands. *It is cultivated with care, propagated by cuttings or layers*." (Thomson 1980:17, italics mine)

Delmas (1927:42) names "Hakamehevao" as the "god of kava planters," but Dordillon (1904:149) names "Kakameheva'o" to that function.

In 1883 kava was outlawed in the Marquesas (Tautain 1898:419) and in 1900 it was rare in all but a few valleys (Caillot 1909:76). In 1888 Stevenson (1971:22) reports palm wine being made at Anaho on Nuku Hiva. By the beginning of the twentieth century alcohol use was well established. Caillot (1909:76) reports that California wine was prevalent. Christian (1910:82) writes of Tahuata: "for the last year or two little work has been done on account of the enervating effects of excessive drinking of coconut toddy. Over all the valleys of the Southern Marquesas drunkenness prevails to an inconceivable extent."

Tautain (1898:421) relates that, by 1892, opium use had been general throughout the islands for some time already and it was hard to find a native that wasn't a user. It was eaten, not smoked. He notes that this had had an unfavorable effect on a whole generation. Opium was suppressed at the end of 1892 and was no longer in use by the beginning of 1894.[61]

Tautain and Christian were in the Marquesas at roughly the same time, but had quite different views of the effects of alcohol. Tautain (1898:422) writes that "the Marquesan gets drunk when he can but too infrequently to create alcoholism, and otherwise we don't see the other signs of this form of degeneration," and that "le Marquisien n'a nullement l'air d'un dégénéré. Aujourd'hui comme autrefois il est très forte, très agile, très dur à la fatigue, résistant aux intempéries … L'alcoolisme n'existe pas."

Christian reports:

> "[1890s] There are numerous plantations of cotton and coconut palms, but the introduction of opium, and the widespread abuse of the fermented coconut-toddy, have rendered the natives indisposed to any toil or exertion, and alas! in many cases physically unfitted for even light and easy work. During their frequent orgies the whole settlement is given up to the most unbounded licentiousness, and the scenes cannot be adequately described or set forth." (Christian 1910:95)

Ihi (Tahitian chestnut)

Thomson describes *Inocarpus fagifer*:

> "[ca. 1840] South Sea Chestnut. Is used as an article of food when roasted; sometimes it is grated down and mixed with milk expressed from the kernel of the cocoanut, and baked in an oven of heated stones. When used in this state it resembles brown bread."[62] (Thomson 1980:18)

Robarts reports that:

> "[ca.1800] There is also a chesnut tree that grows here. The chestnuts are good when baked or roasted. I have many times made a good meal of them and a draught of clear water from the

[60] This report of death by kava may be an exaggeration. Also see Caillot (1909:76).

[61] "Supprimé à la fin de 1892, l'opium a cessé d'être consommé au commencement de 1894" (Tautain 1898:421).

[62] Handy (1923:200) writes that this dish – *piahi* – was also made with taro, yams and manioc, and possibly "in the old days" from *pia*. Currently on Nuku Hiva, taro, manioc, and *ihi* are used; I have talked with people now in their sixth decade that have eaten it made with *kape*.

> spring in times of want, which would cause a sigh to escape for the Cottage I had left behind me." (Robarts 1974:256)

Porter is probably describing *ihi*:

> "[1813] This island, besides the fruit and vegetables already mentioned, produces a fruit somewhat resembling a large bean. While in the pod, and when roasted, its taste is like that of a chestnut; it grows on a tree of moderate height, but is not abundant." (Porter 1970:130-131)

Crook describes the tree: "[ca. 1798] The Ratta, of Otahite (Tahiti), commonly called a Chesnut, is here named Ihhe. The Wood, which it consists of, is hard, and cross grained. The trunk of the Tree does not grow cylindrically, but with hollow and projecting parts alternately like folds in cloth. The projecting pieces are shaped in such manner, that when cut off from the rest of the trunk, one of them has served as a plank." (Crook 1952:cxxx)

Lisiansky (1814:91) notes its harvest period: "*Toomooishee* [*tumu ihi*]. A kind of Chestnut-tree, that bears fruit in the months of May and November."

Ta'o (taro)

In Marquesan, *ta'o* refers to *Colocasia esculenta*. Most of the European accounts of "tarra," "tarro" and other variant spelling of taro probably refer to this same species. Possible confusions could be with *Alocasia macrorrhizos* (*kape*, giant taro, mountain taro) a Polynesian introduction, and *Xanthosoma sagittifolium* (*taru'a*) a post-contact introduction of unknown date from the New World. The latter's leaves look very similar to taro, and the edible corm vaguely resembles that of taro.

Robarts (1974:246) felt that "Plantains and tarrah root is tolerable plenty." At Taioha'e (Krusenstern 1813:125, italics mine) noted "a number of plantations of taro-root and cloth-mulberry, laid out in great order, and surrounded with a neat enclosure of white staves…." At Hakau'i on Nuku Hiva, Krusenstern (1813:131) writes that there "were several larger plantations of the taro root." Lisiansky (1814:92) is the only source that mentions using the edible leaves: "*Taoo* [*ta'o*]. A sort of yam. Its leaves may answer the purpose of broccoli, which it resembles in taste."
Porter (1970:53) writes:

> "The *Tarra* is a root much resembling a yam, of a pungent taste, and excellent when boiled or roasted. The natives, by grating it, and mixing it with cocoa-nut oil, make of it a paste, which is highly esteemed by them. It grows in a nut soil, and much pains is taken in its cultivation." And he mentions "walls" around "their root" crops "to prevent the depredations of hogs" (Porter 1970:57).

Gracia (1843:139) was on Nuku Hiva ca. 1840 and noted taro as food:

> "…leurs vallées leur fournissent le *taro* qui est un manger excellent." A little more than a decade later Jardin (1862:53) comments of the same islands that there was "very little cultivation of taro" because breadfruit was so plentiful and easier. In Thomson's (1980:19) opinion "Taro. Not much of this is raised, the land being too dry for its cultivation,"

which is generally true for the two places he lived, Taioha'e and Vaitahu.

Christian (1910:209) lists five varieties, some of which may be post-European introductions from other parts of Polynesia: "Ta'o-Maoi, with whitish stalks; Poke, large variety purple stalks; Nehu, with reddish-brown stalks; Faafaa; Kua, with light red stalks and red veinings."[63]

Tautain provides a detailed description of taro irrigated terraces. All but a few were abandoned by his time. As part of his argument for a low contact-period population he suggests that taro and bananas were only minimally important:

> "Dans touts les vallées on peut trouver des séries de gradins, de plate-formes plus ou moins larges, plus ou moins longues, selon les indications de la pente du terrain. Bordées, soutenues par quelques pierres basses analogues à celles des limites si le terrain est en pente douce, et alors peu élevées les unes au dessus des autres, ces plates-formes, lorsque l'inclinaison devient rapide, sont supportées par de véritables murs du même type que les murs de clôture. L'alimentation en eau indispensable à la *Colocasia esculenta* est assurée par deux procédés. Tantôt on a choisi un creux, un pli dans lequel ne prend pas naissance un ruisselet, mais où existe un suintement assez abondant et c'est alors qu'on trouve des terrasses de dimensions médiocres dans le sens perpendiculaire au grand axe du pli de terrain, mais assez élevées les unes au dessus des autres. Tantôt, et surtout dans les pentes moins raides, dans les vallés [sic] assez largement ouvertes même au fond, les plates-formes relativement étendues sont arrosées par un canal d'amenée, une petite dérivation du ruisseau voisin, établie le plus près possible en amont. Ce canal est le plus souvent assez soigné ; ses deux rives sont formées de pierres plates pour empêcher les terres de s'ébouler, si bien qu'au-

[63] *Māo'i* = native, *poke* = a dish often made from taro (see section on cooking), *ku'a* = red (or splendid, excellent, marvelous, rare).

Ta'o or *Colocasia esculenta (taro)*. Photo: D. Addison.

> jourd'hui, après un long abandon et malgré le comblement, on peut souvent le retrouver.
>
> "Si ces travaux frappent par l'ingéniosité, l'adresse de leurs constructeurs et tendent à faire admettre une agriculture avancée, ils frappent encore plus par leur rareté. On voit bien qu'autrefois comme aujourd'hui, le ta'o ne comptait pas dans l'alimentation marquisienne, pas plus que la banane, pas plus que le *fei* si employé par le Tahitien. Joint à d'autres, ce fait suffit à faire rejeter les chiffres de population qu'on a attribués aux îles Marquises.
>
> "Aujourd'hui dans nombre d'endroits, les Marquisiens ont laisse périr une grosse partie de leurs arbres à pain sous la dent des chevaux qui aiment leur écorce sucrée. La sécheresse prolongée rend la récolte des fruits d'*Artocarpus* très maigre et médiocre ; beaucoup de fruits tombent avant arriver à maturité. Cependant, on ne voit guère les Marquisiens augmenter ou multiplier leurs rares et minuscules plantations de taro. Triste peuple, mûr pour la mort !" (Tautain 1897:542)

Christian was in the Marquesas during the same period as Tautain; he describes specific instances of taro terraces. At Hana'iapa on Hiva 'Oa he rode "past high embankments built up of stone and rubble, which enclose the rich black soil, forming terraces that overlook the river, planted thickly with beds of *Taro*" (Christian 1910:107). At Hanamenu, where two or three families lived: "The little community boasts of a fine spring of clear cold water, welling abundantly out of the foot of the basalt rock near the shore. A garden of taro and dracaena has been planted round the spring, and the effect is very pretty" (Christian 1910:112). Several decades prior to this, Gracia (1843:149) in describing communal work, reports people working together to prepare and plant "taro gardens": "D'autres fois encore, ce sera pour préparer une vallée à une plantation de *taro*…"

Pia (arrowroot)

Crook (1952:cxxx) thought that "Peas"[64] were "less common" than sweet potato. Thomson (1980:15) writes: "Arrowroot. Although it grows upon these Islands, is neither cultivated nor prepared, except a small quantity which we prepare for our own use." Jardin (1862:51) reports that it was not used.

Among Lisiansky's (1814:93) list of root crops are the following mysterious entries; perhaps one describes *pia*:

> "*Titou*. A root that grows wild in the fields, and resembles our turnip.
>
> "*Togoogoo*. A root of the size of a cocoa-nut without its husk: when boiled, it turns to a sort of pudding."

Kuma'a/'uma'a (sweet potato)

I assume that the following passages refer to *Ipomoea batatas*. Crook (1952:cxxx) writes that "The sweet potatoe (Gumaua) is common" Robarts (1974:246) is probably mistaken about them being wild: "sweet potatoe is here found in the mountains. They grow wild: more are planted." Porter (1970:57) writes of "walls" around "their root" crops "to prevent the depredations of hogs;" sweet potatoes are a favorite of swine and would have benefited from the enclosures Porter suggests.

By 1840, Thomson (1980:19) notes it as a commercial crop, probably at Vaitahu: "Sweet Potatoes. Have been introduced, but we know not by whom; they are raised for the shipping; a few by the natives, but chiefly by foreigners; not a great supply be either; many of the potatoes are destroyed by rats, and many more [by] a worm which infests potatoes' ground; what remains uninjured by these depredations are generally good." In 1853-4, Jardin (1862:21, 43) reports some people at Taioha'e and Hatihe'u were planting sweet potatoes to sell to whale ships.

Puauhi (greater yam)

I am aware of no evidence for the pre-contact introduction of any species of yam except *Dioscorea alata*. Crook (1952:cxxx) writes that "The sweet potatoe (Gumaua) is common; Peas, and Yams less so."

Forty years after Crook and Robarts left the Marquesas, Thomson (1980:19) writes of Tahuata: "Yam. Very few are reared at least in this neighourhood." A decade later, Jardin (1862:50) reports that people don't grow it, but only harvest one when they find it growing: "Les indigènes ne cultivent pas le *Dioscorea alata*, L. é hoi, qui croit en plu-

[64] *Pia*, *Tacca leontopetaloides*.

sieurs endroits; seulement, quand ils rencontrent une de ces plantes, ils en déterrent la racine souvent enfoncée profondément sous terre."[65] Perhaps, by this point, population loss and the consequent relative abundance of breadfruit had made what were once secondary crops only marginally important.

Christian (1910:209) lists five varieties of yam: "Puauhi-Maoi, Puauhi-Kua, Puauhi-Taa, Puauhi-Peai, Puauhi-Maio."[66]

Kape (giant taro)

Lisiansky (1814:93) includes *kape* in his list of root crops: "*Carpé*. This root is about three feet long. The greater part of it grows out of the ground. It takes twelve months to ripen, and is made into puddings, or prepared like yams." Thomson (1980:17) notes "Mountain Taro. Grows large, but is eaten only in seasons of famine."[67] Jardin (1862:52) notes that *kape* grew to gigantic sizes but was cultivated no more than taro.

Miscellaneous and post-contact introductions

Crook (1952:cxliii) notes that "Some vegetable productions grow at Nuguheva, and not to Windward, as the Cashú Nut."[68] Crook (1952:cxxxi) writes that "Pine Apples have been introduced into different parts of the Group, having first been left, as is supposed, by Capt. Roberts, in 1791. They multiply considerably, but suffer through want of care and skill." Crook (1952:cxxxi) also notes that "They have Capsicum, and Ginger. Pumpkins are common, but greatly injured by the Rats. The Goteyo, which is a kind of a green Cucumber, of the size of a small egg, is often, like the nuts of the prickly palm [pandanus?], strung and worn round the neck."[69] Fifteen years later, Porter (1970:131) mentions an English missionary "five or six years ago" who introduced pineapple and castor beans, probably a reference to Crook.

Crook (1952:cxxx) mentions "A Shrub called Ho (or Ko? gms), with large downy leaves, produces a round fruit, larger than a pigeon's Egg; which when ripe is yellow, and of an agreeable acid flavour."[70] A *tau'a* (inspirational priest or prophet, or shaman) at Taioha'e "named Touwattea [Tau'atea?], who resides in Maiou [Me'au], is a middle aged man …Touwatta [Touwattea?] has much cotton upon his grounds, and some trees of Bambu, which in common grow only upon higher land than that which belongs to him" (Crook 1952:clxx).

Robarts (1974:246) describes *kehika/kehi'a* (*Syzygium malaccense*): "Here is also a kind of apple, very red and full of Juice, sweet & pleasant to eat, something like the rose apples of Bengal, but far preferable." Porter (1970:130-31) probably describes the same fruit: "An apple, in shape and nearly in colour resembling a red pepper – it is aqueous and cooling, but rather insipid; the natives are very fond of it. It contains a hard round stone in the center, and I could never learn whether it grew on a tree or a vine."[71]

Langsdorff (1813:107) mentions that the Russians gave Robarts many orange seeds. Lisiansky (1814:93) writes "There is only one species of salad herb on the island, that is calculated for the table. It is called *emahé*, and considerably resembles our field-mustard."[72]

At Taioha'e, Porter (1970:108) distributed seeds "such as melons, pumpkins, peas, beans, oranges, limes, &c. together with peach stones, wheat and Indian corn, which were planted within the enclosures …" Taioha'e people called wheat "maié [mei] … This is the name they gave the bread-fruit" (Porter 1970:108).[73]

Vincendon-Dumoulin and Desgraz mention papaya (1843:210) and guavas. (1843:207). From the same period, Thomson (1980:18) reports that "Papau Apples. Grow in great abundance"[74] and that "Pineapples. Grow wild, and are inferior, but by cultivation may be obtained equal to any in the world. Natives do not cultivate any." In 1853-4 Jardin (1862:58) noted that foreign plants included several kinds of citrus, grapes, vanilla, pomegranates, *Hibiscus esculentus* (his name), and cabbage.

With the English visit of 1774 Marquesan value systems and exchange were set on a path of profound change (see treatments by Dening 1971 and 1980, and Thomas 1990). An earlier section noted sweet potato being specifically grow for sale to ships, and by the end of the nineteenth century plantation agriculture controlled by companies outside the Marquesas was well established. In 1888, Stevenson (1971:32) notes that "Over all the landward shore of Anaho cotton runs like a wild weed; a man or woman, whoever comes to pick it may earn a dollar in the day; yet when

[65] *Hoi* is *Dioscorea bulbifera* not *Dioscorea alata*. Jardin appears to be here describing the latter.
[66] *Māo'i* = native, *ku'a* = red (or splendid, excellent, marvelous, rare), *ta'a* = spear, spine, barb, thorn
[67] I am assuming that he is referring to *Alocasia macrorrhizos*. He may be mistaken about *kape* being only a famine food.
[68] The same passage notes that "At the leeward Islands, they are molested by Swarms of Mosquitos, which have not reached to the Windward part of the Group" (Crook 1952:cxliii). Forty years later Thomson (1980:14) noted that there are "… a few mosquitoes, and upon Nuuhiva sand flies which are equally troublesome." Robarts (1974:249): "They have flies, spider, butterflies, grasshoppers, scorpions, santapees, a few mosquitos, and swarms of small gnats – on *New'ka'hea'va*, and *Woo'ah'bo*, only. They bite very severe and fill the skin with lumps as big as peas. A stranger that comes from the other Isles is glad to get back to his native place. Lizards are here also."
[69] Note the variety of cultigens introduced and established between 1774 and 1798.
[70] Identification unknown.
[71] It grows on a tree.
[72] *Mahi*.
[73] The modern term for wheat and bread, and current since at least Dordillon's time (1845-1888) is *haraoa/faraoa* probably from English "flour" as possibly by way of Tahitian. Crook's dictionary (Crook, Greatheed, Te'ite'i 1998:44) has "potáito (poteto) a kind of bread made of the ihhe [*ihi*], also European Bread and Biscuit." Dordillon (1904:233) gives *potato* = sea biscuit, unleavened bread.
[74] Probably pawpaw (papaya).

Kape (giant taro) or *Alocasia macrorrhizos.* Photo: D. Addison

we arrived the trader's store-house was entirely empty; and before we left it was near full." (Stevenson attributed this rise in production to the stimulatory effect of having the Casco at anchor in the bay.)

A few years later, Christian (1910:95) remarks that, in the Marquesas "There are numerous plantations of cotton and coconut palms…." He mentions on Hiva 'Oa "the rich valley of Taoa [Ta'a'oa] with her palm-groves and cotton plantations" (Christian 1910:98), and that at Hanamenu "much copra and salted fish" was being made (Christian 1910:113). On the same island, at Hanahi a cotton plantation run by M. Bradora, "a small out of the way trader" (Christian 1910:118). Christian (1910:119) notes that there were other cotton plantations between Hanahi and Puama'u but no details. Coffee was planted by Kekela (the Hawaiian missionary or his descendent) around Me'ae Oipona in Puama'u (Christian 1910:123).

People at Hananaonao were growing and harvesting cotton (Christian 1910:150).

At Omoa on Fatu Iva, "on the dryer uplands at the head of the vale, a considerable amount of cotton has been planted," but the cotton was not regularly picked because of toddy drinking (Christian 1910:137). The Société Commercial Océanienne (S.C.O.) was exporting copra, cotton, and fungus[75] on a small trading vessel *Eunice* (Christian 1910:136).

ENCLOSURES

Enclosures are often mentioned but with little detail. Apparently some were stone, and others bamboo or *hau*. Quite likely the two may have been used together – a bamboo-stave fence with stones at the base to discourage hogs rooting underneath. Such fences are in modern use in Samoa. Lines of stones that are probably the remnants of such fences are a common feature in the archaeology of domestic clusters on Nuku Hiva (Addison 2006).

Crook (1952:cxv) writes that "The Property, consisting of Ground, and the trees which it produces, is accurately known by the owner, but only some parts surrounding the houses are inclosed." Robarts (1974:123) repairs an enclosure "of loose stones" on his newly acquired property; it is not clear if it was around a house or a garden or both.

Kiatonui shows Robarts Crook's land: "… a spot of ground where some plantains was planted, and it had been fenced in with bamboes …" (Robarts 1974:127). Crook had lived with Kiatonui in Me'au until:

> "[ca. 1800] Hee-hue, a thoughtful and friendly man, who lived upon some of the Chiefs grounds, farther up the Valley, was fond of conversing with Mr. Crook, and frequently called upon him. Observing a level spot near the Stream, to the Eastward of the Chiefs house, w [h]ere Mr. Crook had sown some radishes, Hee-hue advised to ask for that Ground, which was already cleared, for the purpose of an Enclosure, which he might plant as he pleased, and where he might build a house, to reside in by himself. The Chief had shown no objection to his having any spot he asked for, but not much disposition to be active in getting it cleared, and fenced, for his accommodation. The spot now chosen, contained nearly a hundred Breadfruit and Cocoa Nut trees, with a shed, and a boy, named Mekoneake (his father Kauhhu is dead; his mother Tuhhemaiou lived just by his Inclosure) always lodged, to watch lest the Fruit should be stolen, and to attend the Tabbu house, when required. The house was designed to serve as a corner of the inclosure, and the rest to be fenced with bamboo Canes, fastened across Stakes, to be stuck into the ground. To procure these Materials, and the execution of the fence, Mr. Crook went, according to Heehue's directions, after putting on a clean dress, to a Fisherman that resided on the Chief's ground, who readily at his request, went to draw a seine, to obtain some fish. A thousand, about the Size of a Herring, were soon taken; and Mr. Crook then invited the Natives, as many as were willing to assist him in forming the enclosure, to come together, and partake of the Fish. From Thirty to Forty men and boys were imme-

[75] Christian (1910:220), listing exports from French Polynesia has: "Fungus (mainly from Marquesas and Raiatea), £864."

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A bamboo-stave fence in Samoa, showing rocks to prevent hogs rooting underneath. Photo: D. Addison.

> diately collected, and set to Work; and with the encouragement of some more fish, mahi, and cocoanuts, they speedily completed the enclosure. "Heehue continued to assist Mr. Crook in building his intended house, and beginning to plant the inclosure." (Crook 1952:clxxv)

Lisiansky (1814:84) notes that "Besides a magazine for provisions, the rich have small gardens, or rather enclosures, round their houses, planted with trees, of the bark of which a sort of cloth of made." At Hakau'i, "[1804] In the vicinity of these habitations, *a number of plantations of taro-root and cloth-mulberry, laid out in great order, and surrounded with a neat enclosure of white staves*"[76] were seen by the Russians (Krusenstern 1813:124-25, italics mine).

Porter's (1970:57) passing reference to walls suggests that enclosure may have been fairly common – sweet potato and taro are particular favorites of swine: "Their fruit-trees, except those which are tabbooed, are without enclosure; their smaller and more delicate plants, as well as their roots, have only a wall to prevent the depredations of hogs." Evidently foreign plants were among the "delicate" ones protected by enclosures. Once Porter had "subdued" Taipivai, he had time to visit different parts of Taioha'e and "I generally took with me seeds of different descriptions … which were planted within the enclosures …" (Porter 1970:108). Stewart reports at Taioha'e that:

> "[1829] In a walk of more than a mile, we saw one or two small inclosures only containing clusters of the cloth plant, or paper mulberry, sugar cane, and the roots of the dracaena terminalis, and a few tobacco plants. These however appeared well kept, and the fences surrounding them very neatly constructed of bamboo, lashed horizontally to stakes set in the ground, with cords formed of the shreds of the cocoa-nut shell. Among the spontaneous growth, I recognized many of my old friends of the Sandwich Islands: the pandanus odoratissimus - aleurites triloba - arum costicum - eugenia malaccensis - acacia - gardenia - palma christi, etc." (Stewart 1970:237-38)

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His report on Traditional Marquesan Agriculture will continue in the next issue of Rapa Nui Journal.

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[76] A footnote in the original reads "The tree from which these staves are cut, in the language of Nukahiwa, is called *fau*; it is perfectly white and very light."

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Table 6. Plant names used in the text.

Marquesan	Latin Binomial and Family. Germplasm Resources Information Network taxonomic database (GRIN)	Common English
vi Tahiti	*Spondias dulcis* Sol. ex Parkinson (Anacardiaceae)	Otaheite-apple
Ute	*Broussonetia papyrifera* (L.) Vent. (Moraceae)	paper mulberry
Toa	*Casuarina equisetifolia* L. (Causarinaceae)	ironwood
Tō	*Saccharum officinarum* L. (Poaceae)	sugarcane
Tī	*Cordyline fruticosa* (L.) A. Chev. (Agavaceae)	ti
temanu	*Calophyllum inophyllum* L. (Clusiaceae)	Borneo mahogany
Taru'a	*Xanthosoma sagittifolium* (L.) Schott (Araceae)	New World taro
Ta'o	*Colocasia esculenta* (L.) Schott (Araceae)	Taro
puauhi	*Dioscorea alata* L. (Dioscoreaceae)	greater yam
Pia	*Tacca leontopetaloides* (L.) Kuntze (Taccaceae)	Polynesian arrowroot
Noni	*Morinda citrifolia* L. (Rubiaceae)	noni
Mi'o	*Thespesia populnea* (L.) Sol. ex Corrêa (Malvaceae)	Pacific rosewood
meika	*Musa* spp.# (Musaceae)	banana, plantain
mei, me'i##	*Artocarpus altilis* (Parkinson) Fosberg (Moraceae)	breadfruit
manioka	*Manihot esculenta* Crantz (Euphorbiaceae)	manioc, tapioca, cassava
Ma'i'i	*Terminalia catappa* L. (Combretaceae)	tropical almond
Kuma'a	*Ipomoea batatas* (L.) Lam. (Convolvulaceae)	sweet potato
Koku'u	*Sapindus saponaria* L. (Sapindaceae)	soapberry
kiekie	*Freycinetia* sp(p?). (Pandanaceae)	Pacific liana
kehika, kehi'a	*Syzygium malaccense* (L.) Merr. & Perry (Myrtaceae)	mountain apple
kava	*Piper methysticum* G. Forst. (Piperaceae)	kava
kape, 'ape	*Alocasia macrorrhizos* (L.) G. Don (Araceae)	giant taro
Ihi	*Inocarpus fagifer* (Parkinson) Fosberg (Fabaceae)	Tahitian chestnut
hutu	*Barringtonia asiatica* (L.) Kurz (Lecythidaceae)	fish poison tree
huetū	*Musa troglodytarum* L. (Musaceae)	fe'i banana
hoi	*Dioscorea bulbifera* L. (Dioscoreaceae)	aerial or wild yam
hau, fau	*Hibiscus tiliaceus* L. (Malvaceae)	wild hibiscus
Ha'a, fa'a	*Pandanus tectorius* Parkinson (Pandanaceae)	pandanus
'eka, 'ena	*Curcuma longa* L. (Zingiberaceae)	turmeric
'eka kina	*Zingiber officinale* Roscoe (Zingiberaceae) (Chinese turmeric)	ginger
'ēhi	*Cocos nucifera* L. (Arecaceae)	coconut
'ama	*Aleurites moluccana* (L.) Willd. (Euphorbiaceae)	candlenut

The genetic and taxonomic complexities of the edible members of this genus will not be discussed here.
This second entry is not indicating a Southeastern Marquesan form. I have commonly heard this alternative pronunciation on Nuku Hiva; I am unaware of how widespread it is.